Reviewed this Issue: Adobe Photoshop LE • Corel PrintOffice 2000 • Painter 6

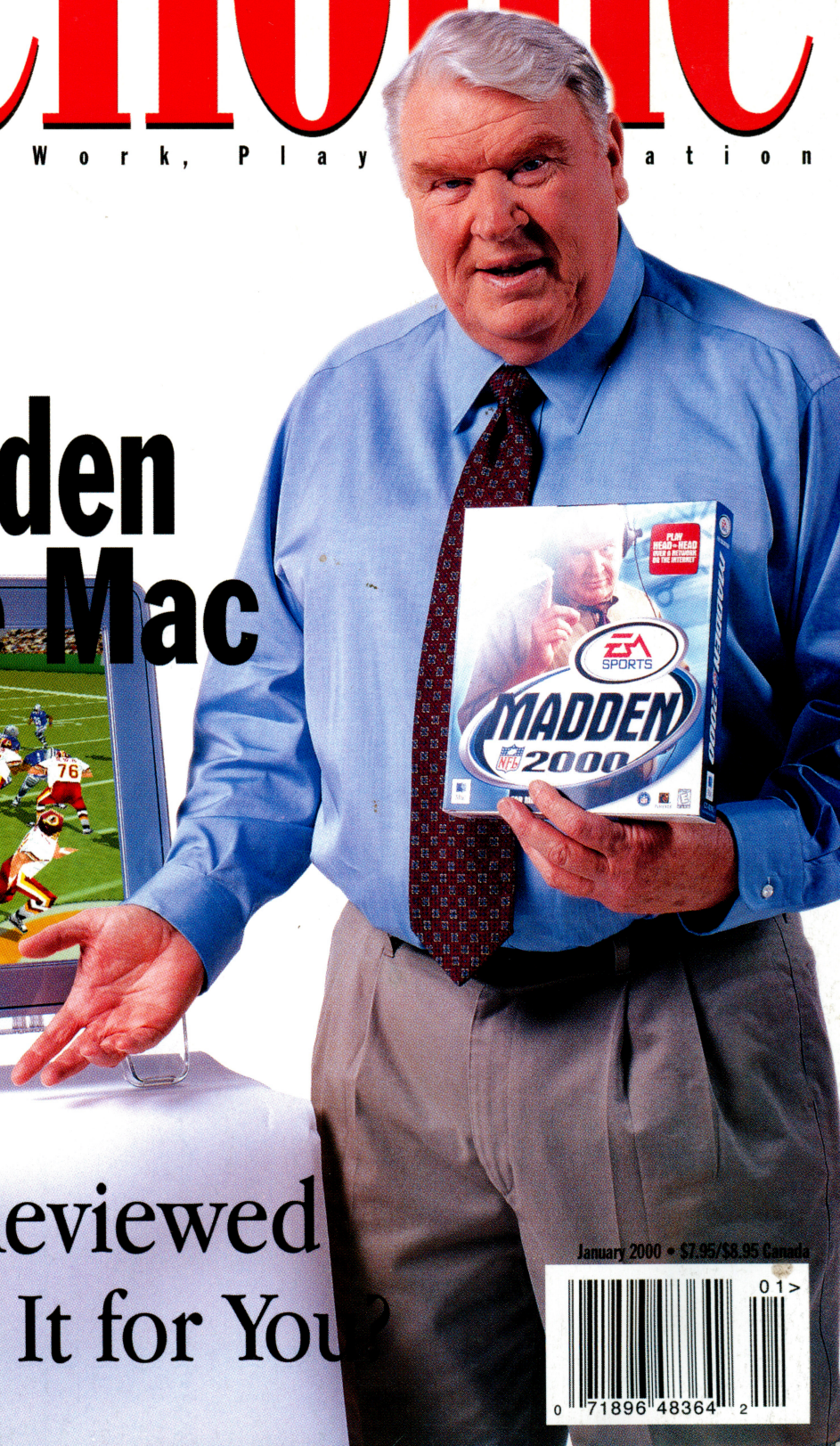
MacHome

www.machome.com

Solutions for Work, Play ation

BOOM!

Madden Hits the Mac



Plus

iMac DV Reviewed

Mac OS 9: Is It for You?

January 2000 • $7.95/$8.95 Canada

01>

0 71896 48364 2

Nine new surfing hits.

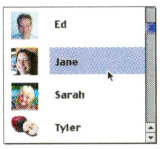
Introducing Mac® OS 9: with nine new power tools designed to make web surfing quicker, safer and infinitely more rewarding. Each of Mac OS 9's new Internet features would be a smash hit on its own, but now they're

*Suggested retail price. Tax/shipping not included. ©1999 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, AppleScript, Mac and the Mac logo are

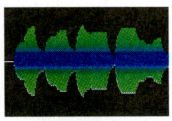
Now available on CD.

1. Sherlock 2. *The ultimate Internet search tool is now your personal shopper as well. Sherlock™ 2 can pinpoint products you want and let you compare prices, availability, even the time left for items on auction. It's also the easiest way to locate people, news and just about anything on the web.*

2. Multiple users. *No matter how many people share your Mac, it will always be your very own Mac. Just log in and all your preferences are activated, from your favorite browser to your choice of desktop patterns. Your private folder is easily accessible until you log out.*



3. Voiceprint password. *Your voice is your password. When you log in, Mac OS 9 analyzes your voice to make sure you're who you say you are. If it's really you, you can get to work right away, with full access to your personal files. But if it's someone pretending to be you, access is denied.*



4. Keychain. *No need to keep track of all those passwords and digital certificates for e-mail and web servers. The personal keychain built into Mac OS 9 will keep track of them for you. Just speak or type your password to unlock them all.*

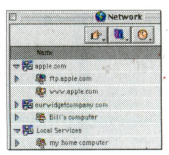
5. Automatic updating. *Now keeping your operating system up-to-date is as easy as installing Mac OS 9. Automatically, over the Internet, it will download (and even install) the latest free updates for your Mac. So you can get the most out of your computer, without worrying about the chores.*

6. Encryption. *Now your private information can remain private, even when you transfer it over the Internet. Mac OS 9 offers built-in, industrial-strength encryption – so you can rest assured that your important files will remain secure, no matter where in the world you send them.*

7. Internet file sharing. *Mac OS 9's built-in file sharing now works over the Internet as easily as it works between two Macs in the same room. So you can set up shared folders that can be quickly accessed by any Mac user you authorize, around the corner or thousands of miles away.*

8. Internet AppleScript. *AppleScript® lets you automate your Mac and your applications, from the simplest task to the most complex workflow. Now you can tap the power of AppleScript over the Internet. And harness the power of multiple Macs working together all over the world.*

9. Network browsing. *With Mac OS 9's built-in Network Browser, you can navigate your way around your LAN, your intranet or the Internet with ease. Now you can find file servers, FTP servers and web servers the same way you locate printers on your own local network.*



all available in one must-have collection. So if you're the type who loves to explore the Internet, now is the perfect time to install Mac OS 9. Surfing's greatest hits, now only $99.* www.apple.com. Think different.™

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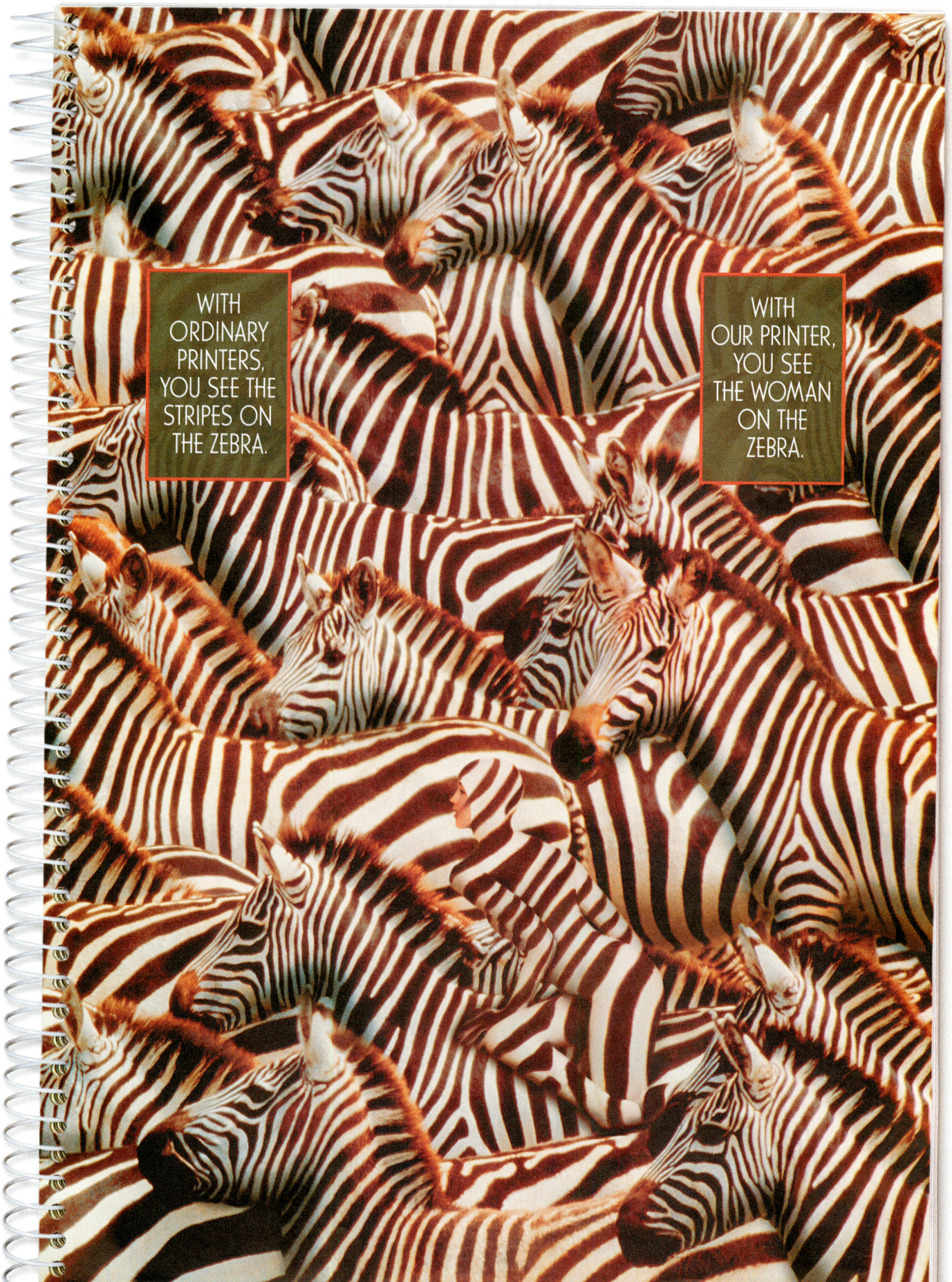
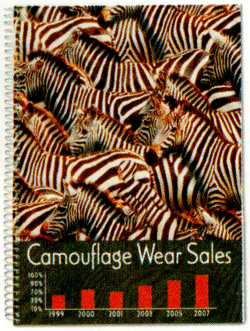

WITH ORDINARY PRINTERS, YOU SEE THE STRIPES ON THE ZEBRA.
WITH OUR PRINTER, YOU SEE THE WOMAN ON THE ZEBRA.

YOU'VE GOT TO SEE IT IN **EPSON** COLOR.



She's incredibly well camouflaged, but you can spot her. Unmistakably. And the company responsible for this sales report knew you would. Because the printer they created it on in its entirety – text and all – was an Epson. One with such acute attention to detail that, even with images as challenging as this, absolutely nothing gets lost in translation. So always, just as you see here, every color and shade is realized. Every nuance is captured. And as you'll discover, when it comes to printers, every stripe is earned.

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Sheer brilliance starting at $99.*

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january 2000

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By Molly Wood

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By Molly Wood

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By Jackie Dove & John Poultney

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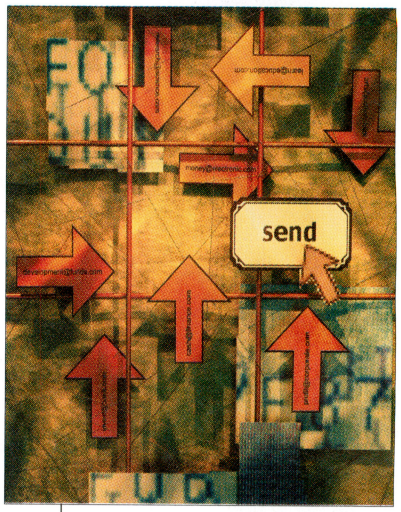

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newsWire

Read all about it: news, products, rumors, gossip, quotes, and innuendo

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Microspot's Media Assistant for Multimedia

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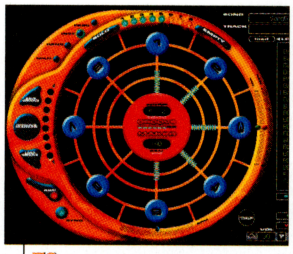

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4 apples	Painter 6

Your Office: Hardware

4½ apples	USB BusPort Card
4½ apples	Digital Media Remote
3 apples	Perfection 610 Scanner
4½ apples	Graphire Pen Tablet
4 apples	HL-1240 Laser Printer
3½ apples	MultiPass C635 MFP
4 apples	Stylus Scan 2000 MFP
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Entertainment

1½ apples	GrooveMaker
4½ apples	Ten Tons of Fun
4½ apples	Tomb Raider III

Your Family

3½ apples	Crayola Creation Corner
3½ apples	Jar Jar's Journey
4½ apples	Spy Fox 2: Some Assembly Required
3½ apples	Smart Steps Series

Our Rating System

5 apples	**Mac-nificent.** You gotta get it. No flaws.
4 apples	**Excellent.** Recommended even if it has a minor flaw or two.
3 apples	**Average.** Despite problems, still a worthwhile product.
2 apples	**Below Average.** Has serious flaws that limit its usefulness or fun.
1 apple	**Poor.** Avoid this product at all costs.

iMac/G3 Compatible USB

Indicates iMac/G3 compatibility

◀ The professionals' choice in Mini DV.

- Exclusive Interchangeable XL mount allows lens options, including: Extra wide-angle 3x lens, 14x (full manual) zoom* lens, long-range 16x (with Optical Image Stabilizer™) zoom lens and super telephoto (with EOS EF 35mm camera lenses and optional EF Adapter)
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Canon offers a line of digital camcorders that fits every need.

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Mini DV

*14x zoom available late 1999. Viewscreen images are simulated.

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- Built-in video editor
- 2.5" LCD viewscreen

to vocation.

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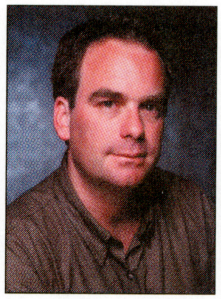
from the chief [Editorial]



Big Dilemma

We've been pretty happy as of late with the state of affairs at Apple. The company, as most folks know, has had a whole lot of ups and downs during the past few years, and it came pretty close to the edge more than once. Bad management, lackluster marketing, and product supply troubles, combined with the market forces from the Windows side of things, nearly crushed Apple into sauce.

But not *everyone* is pleased.

Hopefully this is rectified by now, but when Apple came out with the new crop of iMacs a couple of months back, there were some voices of discontent cropping up. People liked the machines themselves, but didn't like that Apple didn't include the latest OS release with them. Rather than Mac OS 9, it included Mac OS 8.6.

There are a couple of possibilities here. The machines were in production well before Mac OS 9 was finalized, so it may have caused delays to wait to ship them until Mac OS 9 was ready. Another is that Apple just wants to make money.

"People forget something about us," an Apple employee told me recently. "We exist to make money, just like every other company on the planet. We've been pretty generous over the years, but we've had to make some hard choices, including laying off more than 4,000 people, in order to get back where we belong, and to compete in this market."

Which brings us back to Mac OS 9. It doesn't seem logical that Apple's most modern computers wouldn't include the most modern OS, and some people have written to MacHome expressing extreme displeasure at this. "Apple's figuring us for suckers," wrote one, "assuming that after spending $1,500 for a new computer, we would have no problem forking over another $99 for the latest OS. This is insulting and offensive. I paid for a new computer; I shouldn't get old software! I have two daughters who will be starting college in the next few years. Rest assured, they will be carting off new PCs when they go," he wrote.

I pointed out to him that Apple offers Mac OS 9 for $20, not $99, for purchasers of "qualifying computers" purchased after October 5, 1999. And according to information at www.apple.com/macos/uptodate, the company offers to all purchasers of Power Mac G4 and iBook systems, regardless of the purchase date. He calmed down considerably once informed of this, and after Apple's customer service called him.

So. Apple is trying to do the right thing and still get a little money to pay its programmers. If you look at all the facts you might just agree that Apple has a solid strategy. Perhaps it's not the nicest strategy, but hey, Microsoft didn't get where it is by being nice — it got there by being ruthless and (mostly) smart.

As for reactionary moves like switching to PCs, we say don't. If you think Apple's giving you a raw deal with this OS business, wait till you get a taste of the Windows world. And we hope you like phone bills. Tech support from Microsoft is usually a toll call.

John Poultney, *Editor*

MacHome JOURNAL
www.machome.com

President
James Capparell, jcap@machome.com

Publisher
Susan Ford, susan@machome.com

Editor
John Poultney, john@machome.com

Art Director
Joy Jacob Sheldon, joy@machome.com

Editorial

Reviews Editor David Weiss, dw@machome.com
News Editor Jackie Dove, jackie@machome.com
Associate Editor, Gaming & Education
Alex Handy, alex@machome.com
Associate Editor Molly Wood, molly@machome.com
Copy Editor Roberta McNair, roberta@machome.com
Editor at Large Chris McVeigh, chris@machome.com
CD-ROM Editor Chris McVeigh, chris@machome.com
Contributing Writers Andy Ihnatko, Jeff Battersby, Paul Boone, Art Jones, John Lee, Cathy Lu, Amy Shafron, Carrie Shepherd, Gene Steinberg

Circulation

Director of Circulation
Ira Epstein, ira@machome.com
Newsstand Consultant Angelo Gandino

Advertising

Regional Manager
Steve McMahan, steve@machome.com
415-957-1911, ext. 18

Account Executive
Tania Perez, tania@machome.com
415-957-1911, ext. 16

Smart Shopper

National Sales Manager
David Hughes, david@machome.com
415-957-1911, ext. 38

Operations

Business Manager
Lorene Kaatz, lkaatz@iname.com
Network Administrator
Ashley Jones, ashley@machome.com
Office Administrator
Joey French, joey@machome.com

MacHome Interactive
www.machome.com

Hot Tips Editor
Pat St.-Arnaud, pat@machome.com
Sales & Marketing
Susan Ford, susan@machome.com
MacHome Tech Support
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Scott William and No Wonder
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General Offices

703 Market Street, Suite 535, San Francisco, CA 94103
Telephone: 415-957-1911; Internet: www.machome.com

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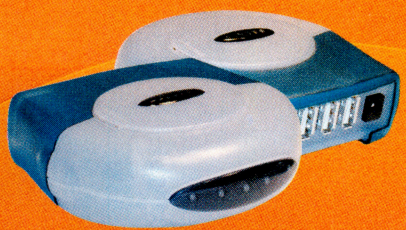
Imagine that. Smart and beautiful.

(Okay, we admit it. A lot of plastic is involved.)

Think about it.

Why should you have to buy a USB hub, then hang stuff off of it until it looks like something out of *Edward Scissorhands*? Why fumble around under your desk every time you want to plug in another device? Instead, try this: A modular, stacking system of USB hubs, with adapters for serial and SCSI. Neat. Compact. And, oh yeah... drop dead gorgeous.



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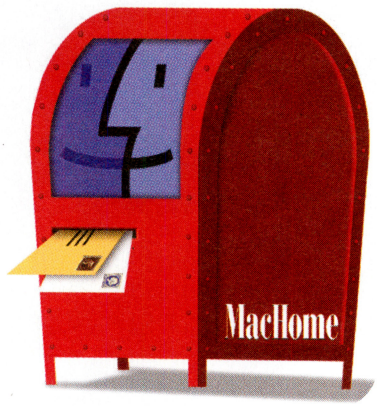
Write On [Your Letters]



Are You Threatening Me?

I have just renewed my MacHome subscription for another year. The first issue I got mentioned that VST Technologies' USB Floppy Disk Drive was reviewed in the June issue. I need a copy of that review, either as a photocopy, text email, an attachment to an email, or as a URL I can look up on the Web. Failure to supply the copy of this review will probably result in my not renewing next year.

Richard Kaplan

✍ *Whoa, big fella! Well, friend, we aim to please, and of course we hate it when we fail to comply with any demands. Here's a solution where everyone's a winner, then. You emphasize that you need that review. We don't doubt that, but we think what you really need is the* MacHome Searchable Reviews Database.

Here's the story. Go to our home page, www.machome.com. *You'll see a section called "Product Reviews." Click there and you'll be transported, as if by magic, to a land of more than 1,000 reviews compiled lovingly from these pages. From there you can search on the product or company name, as well as through past issues.*

Not to blow our own horn, but we think the MacHome Searchable Reviews Database *is a most useful resource. You can look up our reviews almost instantly, satiating your curiosity with no ill consequences. You know, like not renewing next year.*

Suffer Not Ye Buyers

I was bemused by the little article on page 12 of your September 1999 issue, entitled "Tech Support: Still Free for Some." You write, "You see, a while back, some folks bought Apple products under the impression they'd get lifetime technical support ..."

The homely tone of that sentence suggests that "we folks" were suffering under misapprehension. The statements I received from Apple when I bought my Performa 6300 a few years back are clear, lucid, and explicit. We were not given an "impression" by this notice. We were given a commitment, a promise, a contract. Apple failed to live up to this commitment.

James Smith Rudolph

Five Foot Eight, Eyes of Slate

Regarding your Back to Basics article on creating a comfortable environment in one's home office (November 1999, page 81), I'd like to comment that the UC Wellness Letter in an article entitled, "Making your computer easier on your eyes" states that you should position the center of your screen 4 to 9 inches below eye level so that you gaze down at the center of the screen at a 10 to 20 degree angle to prevent neck strain.

Your suggestion that one might raise the display's height on a stand, above a normal desktop, for an average size person would really screw things up. Personally, at my height (5'8") I just use a table top on shortened legs, so that the keyboard is at a good height, and set my iMac on the same surface, with the front support in place. That brings the screen to about 15 degrees off vertical and makes it so that I'm right in the recommended range, looking down at about 15 degrees.

I'd say that your comment that the iMac does not encourage proper posture is all wet. It ends up being ideal for me.

Jerry Parks

Learning to Program

Regarding your correspondents who are interested in Mac programming, I learned to program the Mac ROM toolbox several years ago. I used a book entitled "Macintosh Primer" that contained 10-15 programming exercises, including "Hello World." The book got me started understanding the Mac paradigm. In addition, I used the series of OS guides entitled "Inside Macintosh" Vol I-V. I realize this is out of date now, but a search of Bibliofind, Amazon, Alibris or other online book sellers will list several primer books and new versions of the OS Guide. That, plus a good programming environment (like CodeWarrior) will be enough to get you underway.

Chris Hendrickson

✍ *May we also suggest Real Software's RealBasic?*

Crossing the Line

I just wanted to let you know that I saw an interesting thing in the November issue of PC World. There were two Compaq ads (pp. 126 and 208), which both showed pictures of computer screens running the Mac version of Internet Explorer. I promptly emailed Compaq to congratulate them on their new alliance with Apple. Is there a big announcement looming regarding some sort of partnership? Not that I would encourage such a thing as it would terribly tarnish Apple's image as a producer of quality products. I can only see that Compaq would have something to gain by this sort of platform switch.

Hopefully they'll clarify this situation for me. But I sure hope that if they are not going to offer Mac-compatible

products, that they not use Macintosh products in their advertising.

Chris "The Mac Ad Finder" Goodbaudy

✍ *Good Eye, Mr. Goodbaudy! We think we know what happened. Most graphic artists work on Macs, you see, and though we don't have concrete proof, we imagine that when putting the ad together, someone wanted to show the computers running a program. The artist would have captured a screen shot on his or her Mac (Shift-Command-3, you know) and pasted it in the graphic, thinking no one would be the wiser. But they weren't counting on your sharp eyes.*

A telling state of affairs, wouldn't you say? We're also told that some of the famed "Intel Inside" ads were animated using Macs. Isn't this absurd? Rather like looking at an ad for another television on your old television, or something.

Andy Ihnatko: Man of Controversy

Just wanted you to know that I have entered a new two-year subscription after finding Andy Ihnatko's column in your mag. I have missed Andy since MacUser expired, and adding him to your magazine was an excellent addition to an great magazine. Looking forward to your continued success.

Michael Menard

Yo, Andy, Baby. Regarding your column, "Chipset Boulevard," in the November issue: Whoopi may have no eyebrows, but, *mutatis mutandis*, you ain't got no column, my man. That non-piece was b-o-r-i-n-g. Get a life, write a column, gain a reader. Please!

Jesse Tuffman

We Love Words, Words Love Us

I love words. Reader Don Helwig's letter of complaint (July 1999, page 9) about "arcane" Latinate words surprised me, and it's no wonder it's touched off a little controversy in your letters department. I knew every single word he mentioned, and parts of them are what help to elucidate their meaning because of root words and syllables. I wish the words used by writers of pull-down menus, how-to computer manuals, and technojargonistas (I made that one up) had more relation to root words all us speakers and writers of English, French, Spanish, and even Arabic (for example, "garage") have been using more or less since we were 10 months old. Why complain about "transmogrified," "narcissistic," and "rhomboid," but not "encryption," "configuration," "vector," "luminosity," "gradient," "calibration," and "dithering"? Hey! Obtain a dictionary! And be glad that words aren't just made up out of, say, thin Ethernet! Love your magazine.

Linda Campbell Franklin

Write us!

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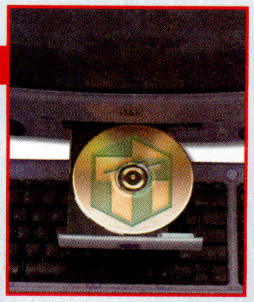

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By Jackie Dove

Now Hear This!

Speech Recognition Shifts Into the Mac Mainstream

The world has inclined an ear toward technology that can remove your hands from the keyboard, either by typing the words you speak or speaking the words you type.

While the Mac platform has, until now, been something of a neglected member of the voice-recognition technology family, that is about to change.

"The Mac is finally catching up with the rest of the world when it comes to speech recognition," says Chuck Rogers, chief evangelist at MacSpeech, the makers of a new suite of speech-recognition products. "People have already passively experienced a voice interface through many science fiction TV shows and movies, so the concept is not unfamiliar to them. As computers continue to become more powerful, speech recognition will improve to the point that it is a natural extension of the interface as opposed to a novelty," Rogers says. "The benefits to the disabled are obvious, but for Mac users the additional benefits from a robust command and control product will provide an incredibly useful 'third hand.'"

One speech-recognition product that has already made a demonstration debut at Macworld New York, is ViaVoice from IBM. ViaVoice for Mac will provide a hands-free interface, letting you write and edit documents and create email. It works closely with Apple's text-to-speech function so the computer can read text back to you.

"This product is targeted toward the general Mac market where we see a pent-up demand for voice-recognition technology," says Krishna Nathan, director of Consumer Voice Systems at IBM. Nathan says ViaVoice is especially designed to work well with the Mac interface.

"We see ViaVoice as an intuitive, easy-to-use application that will appeal to a large portion of the population," Nathan says.

The first editions of ViaVoice will be available in U.S. and UK English. "We want to advance the user interface and make it more natural. "We stayed away from bells and whistles."

However, Nathan says later editions of ViaVoice will likely provide enhancements such as specific professional vocabularies and different languages. These may be included in future revisions or as downloads from the Web.

Another voice on the horizon comes from MacSpeech, which, in a pact with Philips Speech Processing, is developing products for the Mac market: ListenDo!, iListen, and iDictate.

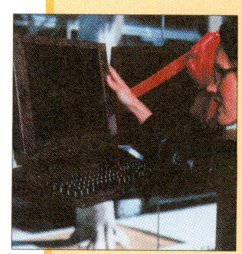
ListenDo!, a PlainTalk-based application that allows users to control their Macs by voice, will be released by Thanksgiving and freely distributed, Rogers says. ListenDo! ships with vocabularies for the Finder, SimpleText, Stickies, and AppleWorks. Users

Monitor Wish List

Your monitor is your window to the world. And new monitors are dropping to some very agreeable prices.

Nokia has introduced several new flat CRT displays. The 447PRO is a 17-inch monitor for $449, designed for professional applications, imaging, CAD, and desktop publishing. It features resolutions of up to 1280 x 1024 at a refresh rate of 90Hz. The display comes with an active USB hub and audio system.

Larger in scale are Nokia's 446PRO ($649) and 445PRO ($1,099), both flat CRT displays measuring 19 inches and 21 inches respectively. The 19-inch display features resolutions of up to 1600 x 1200. The 21-inch display handles resolutions up to 1800 x 1400.



Mitsubishi has weighed in with a couple of, shall we say, visionary items. Teaming up with Oberhofer Hand-Crafted Computers, a new "luxury" LCD line has a customized LCD, keyboard, and mouse crafted in woodgrain textures to match your decor. The 15-inch set starts at $1,499; the 18-inch set sells for $3,599.

Mitusbishi's LCD 151A flat panel monitor, for $1,099, supports resolutions of up to 1024 x 768 and up to a 75Hz refresh rate.

Nokia, 800-296-6542, www.nokia.com

Mitsubishi, 714-220-2500, www.mitsubishi.com

Now Hear This continued

can also create additional vocabularies, or they can purchase separate, application-specific ScriptPaks from MacSpeech.

ListenDo! is available for download on the Web and will be shipping on CD-ROM in January. The CD-ROM version, the price of which has yet to be determined, will include various ScriptPaks.

Initially, ScriptPaks will be available for FileMaker Pro, Internet Explorer, Netscape Communicator/Navigator, Outlook Express, Eudora, SoundJam, and the Mac OS. They will be sold on the MacSpeech Website for $10 to $40.

Both iDictate and iListen, which are based on the Philips technology, will be available in the first half of next year. Retail pricing has not yet been set.

"As people become more accustomed to speaking to their computers, a variety of opportunities will avail themselves. There is certainly an opportunity for speak now, transcribe later applications, as well as professional vocabularies for the legal, medical, and scientific communities," Rogers explains.

DragonSystems, makers of NaturallySpeaking for the PC, recently introduced Dragon NaturallySpeaking for the Mac. Dragon Systems products for the Macintosh are planned initially for both American and British English, with the first U.S. product to be released in the first quarter of 2000. Prices were not set at press time.

With new speech-recognition technology inevitably comes fashionable new hardware. Andrea Electronics has introduced an Apple- and iMac-compatible Andrea NC-71 headset, designed to enhance voice recognition accuracy. The noise-canceling microphone headset, which costs $40, comes in frost plastic and ships with multi-Mac color plastic insert accessories to match your iMac flavor.

IBM, 888-411-1932, www.software.ibm.com/speech
MacSpeech, 978-475-8057, www.macspeech.com
Dragon Systems, 800-437-2466, www.dragonsystems.com
Andrea Electronics, 800-442-7787, www.andreaelectronics.com

Apple's Faux Pas

Well, it seems that when Apple's fanatically loyal customers get all huffy about something, the company tends to listen — the current case in point being the flap over pricing and availability of the high-end Power Mac G4s.

Apple was forced to raise the prices of its Power Mac G4 computers in the wake of a devastating earthquake in Taiwan (we in San Francisco tend to relate whenever that happens elsewhere in the world). Availability of the popular machine was also affected by unexpected chip shortages at Motorola.

The upshot was that Apple reconfigured the processor speeds of the new G4s to match chip availability, but it did not reconfigure the prices.

On October 13, 1999, Apple announced that the new G4s would run at 350MHz, 400MHz, and 450MHz, with prices set at $1,599, $2,499, and $3,499 respectively, thus downwardly adjusting processor speeds by 50MHz, while still charging the same price quoted for the higher speed. (The 500MHz model will be available sometime in the first quarter of 2000, the company says.)

Then, all hell broke loose. Customers expecting top-speed 500Mhz G4s expressed their outrage in no uncertain terms at the prospect of paying the price for a 500MHz G4, and then actually getting the 450MHz model, and so on down the line. In the end, Apple reconsidered.

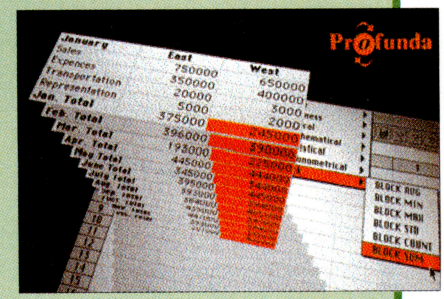
Now, those who placed orders for the high-end system before the Oct. 13 announcement (including those who ordered through authorized resellers), will get exactly what they ordered at the originally quoted price — no switcheroo. Those who ordered the 500MHz model were offered a 450MHz model at its original price. The ruffled feathers started to smooth out.

"We clearly dropped the ball in this instance," said Apple iCEO Steve Jobs in a statement, in which he apologized for "upsetting" and "disappointing" customers. He then quoted the old business maxim: "Good companies make mistakes. Great companies fix them." Indeed.

Apple, 800-767-2775, www.apple.com

Sheets in 3D

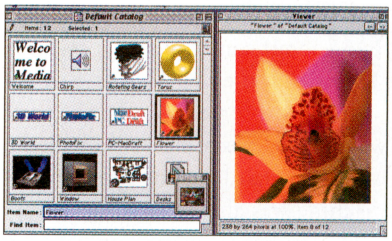
If you work with lots of data or need do sequential record keeping, such as monthly sales statistics, financial plans, and scientific or patient records, the new version of Storeys 1.5.1 3D spreadsheet may be right on your street. This 3D spreadsheet program, for an introductory price of $90 ($60 for students), can save you time and make your work more fun by making your data jump out at you. Storeys is designed such that part of your spreadsheet can actually appear in 3D layers while other parts can appear without layers.



With Storeys you can create layers as well as calculate "through" layers, with a single click. It lets you copy the contents of any number of layers at the same time and then paste contents into any number of specified layers at the same time. It also makes short work for businesses who want to view spreadsheets on the company intranet. Using Storeys, you can combine data from all branches of the company right inside the program.

Profunda, www.profunda.com

Multimedia Management



These days, it's all about multime-dia. You find yourself creating, downloading, or converting numerous images, video clips, audio files, and text information, and then sharing them with others. But how do you manage all this stuff?

Microspot Media Assistant 2.0 from Microspot, which sells for a $49 online introductory price ($69 for the CD version), lets you collect, store, organize, display, and share data, including media gathered from the Web, CD-ROMS, servers, and other sources. This utility lets you create unlimited catalogs for collecting images, sounds, movies, text, and HTML files. How? Simply drag and drop your files into the floating catalog drop boxes, which can be customized and password-protected. Media Assistant catalogs can hold files of any type, including PICT, TIFF, JPEG, WAV, MIDI, MP3, and more. A viewer palette lets you view your images, or play your movie or sound files. You can also find and organize the contents of your catalogs with the program's search and sort capabilities and produce slide shows, QuickTime movies, and HTML documents.

Microspot, 800-622-7568, www.microspot.com

Lookin' Good

So you've been wanting a digital camera and it's impossible to decide which one to buy. We feel your pain. But that does not stop us from sharing the nifty news about the Olympus C-2020 ZOOM digital camera. This model, which sells for $899, features a 2.11 megapixel resolution (1600 x 1200 pixels), 3X optical zoom lens, and infrared remote.

The camera features both automatic and manual controls, with creative control features such as QuickTime movies, black-and-white and sepia modes, a wide-angle LCD, manual exposure, and auto exposure bracketing. Shutter speeds from 16 seconds to 1/800 second can be paired with aperture settings of F2.0 to F11 at a wide angle focal length or F2.8 to F11 at telephoto focal length in one-third-step increments. There is also an external flash mode.

The camera also includes a QuickTime movie shooting mode at both 15 and 60 frames per second. To help with movie sequencing and shooting, the camera has a remote control that takes photos at the touch of a button.

Olympus, 800-622-6372, www.olympusamerica.com

DiamondSoft Ships New Font Manager

If you're in the business of managing your fonts, tune into this: DiamondSoft is shipping version 2.5 of Font Reserve. The new version, which costs $90 online and $120 on CD, includes Action WYSIWYG from Power On Software, an application font menu manager that lets you organize application font menus by grouping fonts together by family. It also lets you display the fonts in their actual typefaces in the font menus. Font Reserve 2.5, which has been enhanced for Mac OS 9, ships with a new Adobe Illustrator plug-in and an updated version of the Font Reserve XTension for QuarkXPress.

DiamondSoft, 415-381-3303, www.fontreserve.com

Share and i.Share Alike

Are you a graphic artist, photog-rapher, or mad snap-shooter who wants to show your images to clients, friends, and family?

Now you can with i.Share, a new Photoshop plug-in. i.Share gives you an easy way to send Adobe Photoshop, Photoshop LE, and PhotoDeluxe images to the Club Photo Website for immediate display. And, it's free!

The i.Share plug-in, which you can

download and install from the Club Photo Website, lets you immediately upload your images for instant display in your own photo album on the Club Photo site. A free membership form is provided, giving you a user name and password for convenient uploading to the site. Thus, anyone you want can access your images via Club Photo.

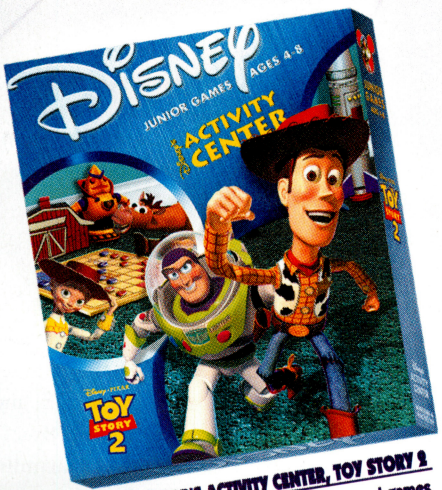
With i.Share you get adjustable JPEG compression controls so you don't have to flatten or modify images before uploading. And if you've got a Palm (of the Pilot variety), Club Photo has a free utility called Album To Go, a Palm-based interactive photo album that lets photos viewed on your Palm appear one picture at a time, or as a slide show. You can even beam photos to another Palm.

But say you don't want everyone in the world looking at your pictures. No problem. Just lock your personal photo album with a password.

i.Share, www.clubphoto.com

The Toys Are Back And Now They're On Mac!

Where the movie ends, the fun begins!



DISNEY/PIXAR'S ACTIVITY CENTER, TOY STORY 2
Toy Story 2 comes to life in six fast-paced games and creative activities for hours of hilarious fun. It's a blast for the entire family!

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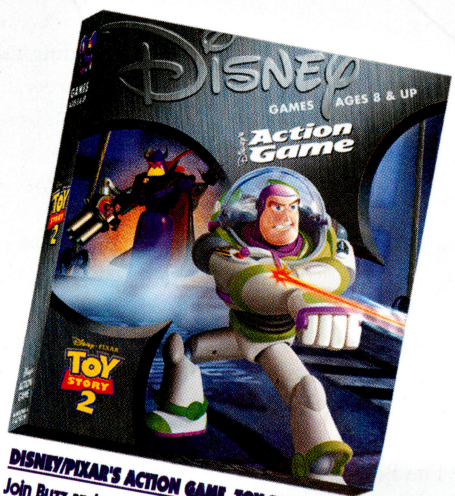
TOY STORY 2



DISNEY/PIXAR'S ACTION GAME, TOY STORY 2
Join Buzz and your favorite Toy Story 2 characters on an action-packed 3-D adventure to rescue Woody and battle the evil Zurg and his army of robots.

EVERYONE E CONTENT RATED BY ESRB

Mac

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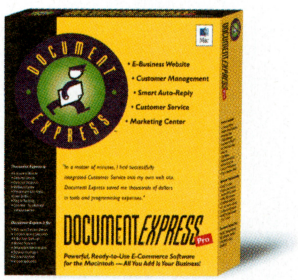
Good Relationships, Good Business

So you have a small business and lots of clients, and all of this is good. But how do you prospect, keep in touch with people, and respond to their individual needs? That's a job for Document Express Pro, a ready-to-use ecommerce application.



Document Express Pro software lets you incorporate, initiate, and maintain relationships with your sales prospects through Internet marketing and email response management. Ideal for Web-based business owners, it gives you a completely functional ebusiness Website that can be linked to an existing Website (if you have one) or used as a standalone Web presence. This Website is equipped to help you collect information from your online visitors.

In addition, the software provides a marketing center that lets you create and organize all your marketing campaigns, auto-reply greetings, faxes, letters, memos, and other documents. Merge technology makes all correspondence personal. The software also facilitates delivery of documents such as electronic newsletters and catalogs, and product and pricing information. The $250 software also has an array of plug-ins to enhance the program.

Document Express, 858-551-6767, www.documentexpress.com

Fashionable Pads

Mouse pads are ubiquitous. And of all the varieties of mouse pads available — from tacky computer company logos to fine art reproductions — will mouse rugs be the next thing? You've never heard of a mouse rug? We suspect you're not alone.

Fiberlok has introduced six new patterns of its MouseRug, which combine artistic woven visual design of traditional handmade rug patterns with the technology of a mouse pad. MouseRug, which sells for $25, has a durable surface made of Lextra fiber coating. There are now 15 rug styles to choose from, including museum reproductions.

Fiberlok, 877-210-3582, www.mouserug.com

Rack 'em Stack 'em

Are your CD-ROMs spilling out of their small enclosures and scattering all over the place? If you're like us, then you need a nice, orderly rack in which to store them. Fellowes has several stylish CD storage racks for all kinds of spaces and tastes.

You can get the CD Cylinder ($10), which holds up to 30 caseless CDs and DVDs. A 48-CD Wire Tower ($18) holds — you guessed it — 48 CDs with jewel cases, with space for double CDs at the bottom. CD Manager, a futuristic, Jetsons-inspired model ($12) can store 24 CDs with Jewel cases. CD Access File ($19) is a compact desktop CD/DVD storage unit with 50 clear, double-sided sleeves to store up to 100 CDs or 50 discs with booklets. The 96 CD Album ($25) can transport large CD collections anywhere.

Fellowes Manufacturing Co., 800-945-4545, www.fellowes.com

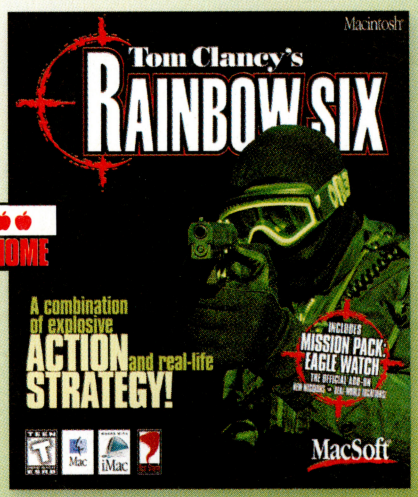
On Overdrive

Say you've got a new Power Mac G4 or one of those nifty iMac DVs and you're reading, writing, and burning CDs like mad. What drive do you use? EZQuest has released two new FireWire CD-RW drives: the Boa FireWire 4 x 4 x 24 and the 6 x 4 x 24. These drives, which are compatible with the iMac DV, blue-and-white G3s, and G4 Power Macs, retail for $369 and $409 respectively.

The Boa FireWire 4 x 4 x 24 writes to CDR discs at 4x speed, rewrites to CDRW discs at 4x speed and reads at 24x speed with a maximum transfer rate of 3,600K per second and a 2MB buffer. The latter writes at 6x speed.

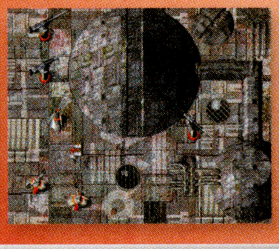
Sony has expanded its Spressa CD-RW drive line with four new offerings — two internal and two external. They offer faster reading and recording speeds for storing, managing, and sharing information. Three drives (the Spressa Professional SCSI, Professional EIDE, and iLINK – that's Sony's name for Firewire) now support 8x recording of CDR media and enhanced CD-ROM maximum reading performance of 32x. The Spressa USB Plus drive supports 4x CD-RW recording. Prices range from $329 to $499.

EZQuest, 714-694-0031, www.ezq.com
Sony, 800-686-7669, www.sel.sony.com



The most revolutionary action/strategy game of its kind. Nothing else comes close to offering such an exciting combination of explosive action, real-life strategy, team-building, realistic three-dimensional graphics and true-to-life Special Forces action. If you die, the game isn't over...THE WORLD IS!

Includes the award-winning titles Total Annihilation®, Total Annihilation: The Core Contingency™, and Total Annihilation: Battle Tactics™. A real-time strategy game of epic proportions, battles decide the fate of the galaxy!



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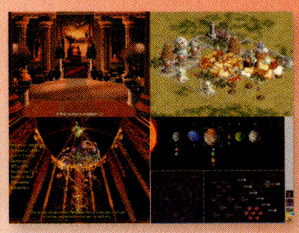
A strategy game fanatic's dream come true! Four hot games in one affordable package allow you to build an empire to span the stars and last a thousand years. Whether you're out to conquer a planet or rule the galaxy, Deadlock, Master of Orion II, Star Control 3, and Civilization II will keep you coming back for more, and more, and more.



From the creators of the award-winning Unreal™, this stand-alone game showcases completely new team-based gameplay, groundbreaking multi-faceted single-player action or dynamic multi-player mayhem. It's a fight to the finish for the title of Unreal Grand Master.

TITLES AVAILABLE AT Outpost.com OR BY CALLING 1-800-229-2714

I Got John Madden

Sports Storm Back into Apple End Zone

By Molly Wood

It's anyone's guess as to the last time there was a sports title for the Mac. Well, the genre is back with a vengeance.

If you've looked up from your iMac screen in the past few weeks, you may have noticed it's football season. Just in time for Christmas, *Madden NFL 2000* is about to sit you back down at your computer.

Easily the most-played sports game in the industry, the *John Madden Football* series has sold more than 13 million units on all platforms over the lifetime of the franchise. By the time you read this, it will be back on the Mac for the first time in 10 years.

"There was forever this huge hole with Mac gamers just wanting a sports title," says Jeff Baietto of Aspyr Media, publisher of the *Madden* Mac version, which was developed originally for the PC by Electronic Arts. "This is kind of the marquee."

Based on early reports, the response is a good one, Baietto says. After some production delays, the game was due for release Nov. 12 — just about halfway through the actual NFL season.

Madden 2000 features the look and feel so many sports games fans are used to, but it might be news to Mac players, says Mark Adams, president of WestLake Interactive, which developed the Macintosh version.

Of course it's got lightning-fast gameplay and completely realistic graphics — we'd expect no less. As usual, all 31 teams are represented, along with up-to-date rosters of every player. Included in some of the *2000* updates are player models that are scaled to their real NFL counterparts' actual height and weight, meaning linebackers look bigger than

quarterbacks, and defensive backs look bigger than running backs, Adams says.

Madden 2000 uses historical stadium models to mimic the look and condition of each team's home field, as well as weather and fan conditions. It snows in Green Bay's historically harsh-conditioned Lambeau Field, and when it does, Adams says happily, every single player leaves footprints in that snow.

Included are the Madden fixtures sports gamers have come to know and love: You're the coach, general manager, and owner of your own team, so you can build a franchise and compete against your friends. You can customize your own team and track stats in a season you create. You can create plays and game situations, or you can even re-create real-season matchups.

The game also features a short intro and some commentary by Madden, longtime NFL broadcaster Pat Summerall, and former player and commentator James Brown.

The graphics and animation are incredibly high quality — players break tackles, juke from side to side, and make diving catches in smooth animation. Touchdowns are followed by celebratory dances (though there don't appear to be any penalties for excessive celebration). Meanwhile, they're playing on authentic NFL fields with crowds that shout individual team chants and react to big plays.

Baietto says it's appropriate that the best sports game out there lead the genre back onto the Mac: "The benefit of being a Mac gamer is that the releases are all triple-A, because it's a more concentrated market."

Throwing into Traffic

Baietto says it's no accident that the release of *Madden 2000* for the Macintosh dovetails with the release of Macs that are increasingly better equipped for gameplay.

Apple is increasing its commitment to gamers and the high-end graphics-producing machines they crave. The G4 and the iMac DVs, most notably, feature improved graphics acceleration cards and more video memory, making them more than competitive gaming machines.

"You're seeing Apple really get behind games and make that a focus," Baietto says. "It's showing consumers that everyone's getting behind it. That's a huge, huge change in the last 18 months. What we've done is to try to get the best games."

While Baietto suggests that *Madden 2000* is probably best run on a G4, "this runs on all the iMacs and some of the older machines."

Indeed, we ran it on an iMac DV Special Edition, and true to *Madden* form, the hits were hard, the passes crisp, the stadiums awesome, and the fans noisy and boisterous.

"The nice thing is we have such high-quality source to work from," Adams says. "We kind of get to leech off of that. They're spending millions of dollars working on the game for the PC and Playstation and other platforms, stuff like going to record Pat Summerall and John Madden. That's stuff we would never be able to do."

Adams says it was exhilarating to finally get to work on a legitimate sports title for the Mac. "We just thought the Mac market was just starved for them," he said.

Clent Richardson, Apple's VP of worldwide developer relations, is very pleased with the news. "Electronic Arts and Aspyr are of course huge name in sports titles and game publishing, and the fact that they realize there are significant business opportunities here is a great sign for the Mac."

"There's a thriving and very profitable franchise on the Mac for gaming developers," he continued, "and we do expect to see more such releases." He noted that publishers like Electronic Arts have significant portfolios of game titles, and that Apple's "complete and total commitment" to gaming should make the Mac market an attractive business proposition. "We love games," he said. "It starts at the top and goes throughout the DNA of this company. We're working hand in hand with our developers. Games drive sales of hardware, and the more hardware we sell, the more software titles are sold. It's a beautiful thing."

Baietto and Adams admit producing a major sports title for the Mac is a minor risk — mostly because no one can accurately predict how Mac gamers will respond to a sports title, even one as high-profile and well-established as the *Madden NFL* franchise.

"We really hope that it's going to be one of those things," Adams says. "It's easily recognizable. People might not buy a *Quake 3* or a *Tomb Raider* because they might not know how to use it. But everybody knows something about football."

"Judging by the number of pre-orders and the emails and the excitement in general, there is a lot of interest," Baietto says. "But it's all relative for the Mac. We really have no idea if this is a game that is going to go off the charts. But I'd be really surprised if it doesn't." MH

Madden NFL 2000
$49
Aspyr Media
888-212-7797
www.aspyr.com

iMac DV Computer of Tomorrow

iMac DV Special Edition Reviewed: Packs a Computing, Aesthetic 1-2 Punch

When Apple first introduced its iMac line — brightly colored, compact, easy to use, geared primarily toward education and Internet access — it was like a pedestrians' revolution.

By Molly Wood

The iMac came off like Cliff's Notes for home computing: the fastest, easiest way to jump-start your trip to Internet-ville.

But in its trim, fast-track form, the iMac lacked a certain amount of depth. Critics quickly picked apart its shortcomings: It had insufficient memory and it was too hard to add more RAM; it had tinny speakers, no DVD drive, and weak 3D graphics acceleration hardware.

That was then. Apple has sent the iMac to graduate school. And the iMac DV Special Edition (SE) came out with a doctorate.

In the iMac's top-of-the-line incarnation, its base configuration is 128MB of RAM, unlike the 32MB of the original iMac. It runs graphics on an ATI RAGE 128 AGP 2X card, for 3D/2D acceleration that means so-called "high-end" games can now be played on the iMac. It comes equipped with FireWire and new, bass-thumping (well, sort of) speakers.

The DV (Digital Video) models answer the near-universal call for a DVD player, and even that is iMac-easy, with the slot-loading CD-ROM and DVD-ROM located dead center between the speakers on the iMac's front face. The second generation brought a new look, too. From the experimental light-heartedness of the original version comes a luxurious, refined look — more shiny and translucent. The tangerine iMac resembles a glistening drop of amber, while the once-unpopular grape looks downright succulent.

And the Special Edition, sitting atop the iMac dynasty in both power and aesthetics, asserts its presence in a sophisticated, industrial-looking

translucent graphite. It is noticeably smaller than the original iMac, and the old style looks downright dingy next to the SE's gleaming hull.

A few stylistic flaws remain, in my opinion, most noticeably the round mouse and the inexplicable keyboard, which is small, cramped, and lacking the all-essential forward delete key.

The speakers, while markedly better than the previous iMacs', certainly can't stand as the sole source of sound, and especially not if you're watching DVDs. But really. If the alternative is a beige box or a clunky, space-consuming desktop setup, these piddling complaints are virtually academic.

And nary a nitpick comes close to attacking the heart of the SE: It's a serious computer with serious power.

It has a crisp 400MHz processor to complement its impressive 128MB of RAM, and a 512k backside cache. (The backside cache stores frequently accessed material for easy retrieval; the larger the cache, the faster the access.) Don't forget that 8MB of video memory, too, which allows higher resolutions, more colors, and greater speed. The SE's display is clear as a bell, and graphics come up fast, precise, and unified.

Its software package alone should make you drool: Mac OS 8.6 (for now), QuickTime 4, the DVD player, Apple's new iMovie software — only available on the DV models, Appleworks 5, Quicken Deluxe, *World Book Encyclopedia*, KidPix Deluxe, Adobe Pagemill 3.0 HTML editor, Internet Explorer and Netscape Communicator, Outlook Express Email Client, AOL 4.0 and free 30-day Earthlink TotalAccess Internet service offer, the *Bugdom* game, *A Bug's Life* DVD movie, and a Software Restore CD with the CD set.

Add that to the base capabilities and for its price, a cool $1,499, the SE can't be beat. It's got easy networking capabilities; plenty of storage; a built-in 56K modem; the iMacs' standard 10/100 Base-T Ethernet; two USB and two FireWire ports, and a slot-loading 24x-speed CD-ROM/DVD-ROM drive.

Sure, there's always going to be an upgrade problem with the iMac: If you want to add video cards and CPU upgrades every few months, you're going to want a different machine. But the SE is good enough that I'd urge you to consider forgoing such simple pleasures (hey, it'll save you money) in favor of what can only be described as a complete package.

Testing, 1-2-3

The SE more than matched up against the other Macs in its class. It outperformed not only computers with the same speed processor, but, in overall system performance, even the slightly faster PowerMac G3 450, which was both surprising and impressive.

Here are the specs: In Norton Benchmark tests, the SE's overall system ranking was a cool No. 1. With its system bus bumped from 66MHz to 100 and its CPU upped to 400MHz, plus the addition of the AGP 2X video connection, the box handily outpaced its closest megahertz-for-megahertz competitor, Apple's own G3 400.

Its CPU performance ranked only behind the G3 450, and its improved graphics acceleration gave it the edge in overall video performance, too.

The SE came in a tad slower than the G3 400 in overall disk performance, but delays were certainly not evident to the casual user. Or even the noncasual user, for that matter.

The machine's speed is evident from the get-go. Windows pop open almost startlingly fast, programs zip nicely along, downloads that seemed slow on the old iMac now spring up like a pogo stick.

Beginner's Game

Gameplay being among the best ways to test a computer's speed, it seemed only appropriate to spend several hours — in the name of science, of course — playing *Unreal Tournament* and *Madden NFL 2000* (which will be shipping by the time you read this).

The verdict? The retooled iMac can safely be considered a gamer's machine.

While the original iMac drew derision for graphics acceleration hardware described to this reviewer as "sucky," the new version runs an ATI RAGE 128 2D/3D graphics accelerator in an AGP 2X slot (at 132MHz) — and it definitely shows.

The opening video on *Madden NFL 2000* played like an MTV production. Craggy football-player faces grimace in close-ups, and players juke left and right as fast as in real life.

Some gamers (most notably those here at *MacHome*) say the 8MB of video memory could, at some point, fail to be sufficient to support newer games, but for now, it's plenty.

And that brings us, appropriately enough, to the iMac DV series' most touted feature: digital video.

Buggy Bugs

The Special Edition comes packaged, handily enough, with a DVD of Pixar's *A Bug's Life,* which, not surprisingly, led to immediate "testing."

Unfortunately, the iMac's DVD software is one of the only notable shortcomings in this otherwise fine machine. On the SE's first run out of the box, *A Bug's Life* was inserted into the disc drive, the software was activated, and the iMac promptly crashed. Horrors! A quick restart (the new iMac's restart button can now be activated by a fingernail, rather than by a paper clip or specially designed restart button!) had us up and running again, but it quickly became evident that Apple's DVD software isn't finished.

The frames occasionally freeze and fall

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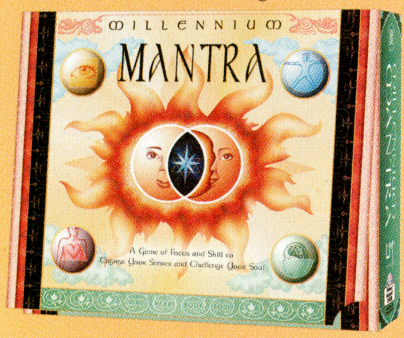

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out of sync with the sound, and if the mouse is jostled during viewing, the video skips and seizes up. Every time the control pad is activated, the video stops and becomes jarringly pixelated.

The speakers, I think, simply don't provide enough depth for DVD viewing, so you'll almost certainly want to invest in some additional sound (consider the jellyfish-looking iSub, designed by Harmon Kardon just for this purpose, as a companion piece, $99, www.apple.com) if you're planning to use your iMac often for entertainment purposes, and this goes for gaming as well.

Also, while I appreciate the compact nature of the iMac as a desktop machine, I find its 15-inch screen a bit too small for adequate video viewing and gameplay. Still, the quality of video can't be faulted. *A Bug's Life* was rendered gorgeously. If only the DVD software were up to par, but Apple claims to be working on it.

Saturday Night at the Movies

As Apple (rightfully) targets desktop video as the next Big Thing in home computing, it has bundled the DV series with the new iMovie software, which is otherwise unavailable. The software is designed more for ease of use than extremely sophisticated movie-making, but few users should have needs demanding enough to find serious faults with iMovie.

And it really is easy to use. As a video neophyte, I literally pulled a Canon Elura digital camcorder out of the box, shot some footage around the office, and made a movie in just under two hours. Digital video lets you transfer footage from one storage medium to another with no loss of quality.

That transfer is a snap with iMovie and the iMac DV, which uses a FireWire port to connect a DV camcorder to the DV-model iMac, and Apple has, for a limited time, been shipping the cable free with its DV-model iMacs.

Clicking the Import button transfers the footage onto the iMac in a process that took about 30 seconds for our four minutes of video. The software breaks video into clips based, as near as I could tell, on pauses in actual shooting, and the result is bite-sized, usable chunks of footage. The rest is up to your creativity.

Using a simple system of cut and paste, the software lets you rearrange scenes; crop footage; cut and paste text and graphics; add sound and music, transitions, special effects, titles, and credits; and on and on. You can even record your own soundtrack or import music from CDs or audio files.

Once you're done, you can export the finished product to an email or Web-ready format — our 53-second video compressed to a compact 1MB — or you can export it onto CD.

The simplicity and range of options are astonishing, particularly to someone who hasn't worked with video before. The program's tutorial is easy to follow, using cute footage of a couple of kids washing a dog.

iMovie is the perfect complement to the iMac, and, in keeping with the Macintosh tradition, it brings movie making home to the masses — almost. Unfortunately, digital camcorders aren't cheap, ranging from $700 to $1,700. You can convert 8mm, Hi8, VHS, or SVHS formats to the DV format, but it requires an expensive converter box.

Still, if you have the equipment, iMovie makes video editing easy and efficient for everyday life, meaning your home movies can have some quality now, as opposed to those grainy, out-of-focus, wobbly videos you've been yawning through with the relatives.

The Complete Package

If you're settling on an iMac as your home computer of choice, go straight to the top with the Special Edition. Its only real drawback is its higher price, and this machine is more than worth it. MH

rating 4½

iMac DV Special Edition
$1,499, Apple Computer
800-538-9696
128MB RAM, 13GB Hard Drive
Standard DV Model (in iMac colors) 64MB RAM, 10GB Hard Drive, $1,299

Fast, easy, attractive, software package to die for; great graphics, DVD, FireWire, AirPort, USB, tons of memory and 8MB of video RAM. And on and on . . .

DVD software still a little buggy, cramped keyboard, uncomfortable round mouse, speakers need a boost.

The Ultimate Game for the Ultimate System!

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By Jackie Dove & John Poultney

Mac OS 9

A Powerful **New Operating System,** But Proceed with Caution

New OS Heralds **Major Innovations** for Consumers

Installing a major operating system upgrade is always a complex decision. Often, users wait until their systems can no longer handle their applications, or they upgrade when their school or office does. Sometimes, though, a slick marketing campaign and a compelling price tag convince users to make the leap to a new system. All of the above seem to be driving the extraordinary demand for Mac OS 9, particularly in target markets such as consumer, education, design, and publishing.

No question about it — Mac OS 9 is a major upgrade, boasting 50 new features, including nine specific Internet features. On the surface it maintains the look and feel of System 8.6, but the innovations under the hood are not trivial. The new OS highlights enhanced networking, Internet integration, and security.

With Mac OS 9, Apple has also ditched the previous 680x0 code, so the new OS will now run only on Power Macs with a PowerPC 601 processor or better, signaling the end of the line for 68K backwards compatibility. Indeed, OS 9 may be the last operating system that will run on pre-G3 Macs.

The new OS, priced at $99 ($20 for customers who purchased Macs on or after October 5, 1999, or for iBook and G4 owners, regardless of purchase date) transcends current limitations by opening files as large as 2 terabytes (2000GB) while it boosts the number of files you can leave open.

Several system extensions and control panels have been either updated or replaced. For example, a new Multiple Users feature replaces the Users & Groups control panel, letting you share your Mac with each person in the household or office while maintaining the privacy of your files and passwords. The redesigned search utility, Sherlock 2, sports a new interface closely resembling the QuickTime 4 player, and it features enhanced capabilities. The new OS even provides built-in support for the Palm Pilot, a.k.a Connected Organizer.

Mac OS 9, billed by Apple as "Your Internet Co-Pilot," adds several compelling items to your Control Panel, such as Keychain Access, Software Update, Multiple Users, and Sound. Encryption and voiceprint password are also new to the OS.

Mac OS 9 facilitates file-sharing over the Internet and

Internet AppleScript, while a Network Browser feature lets you access various file servers.

And while software vendors are scrambling to update their products to maintain compatibility with the new OS, a new error message, Type 119, has been added, indicating that a program conflicts with Mac OS 9, and that it needs to be updated. (Such an error message will not crash your system, however.)

Installation

Mac OS 9 installed easily over OS 8.6, which was convenient. There is no need to do a clean re-install with Mac OS 9.

To install Mac OS 9, you'll need at least 32MB of physical RAM (though more is, of course, better) as well as 150 to 400MB of free disk space. We should also note that Mac OS 9 has not been certified for use on clones or systems using third-party processor upgrades. A firmware upgrade may be necessary for some older Macs, and that is included on the Mac OS 9 CD.

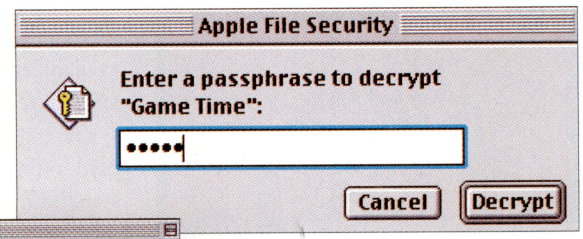
Sherlock 2

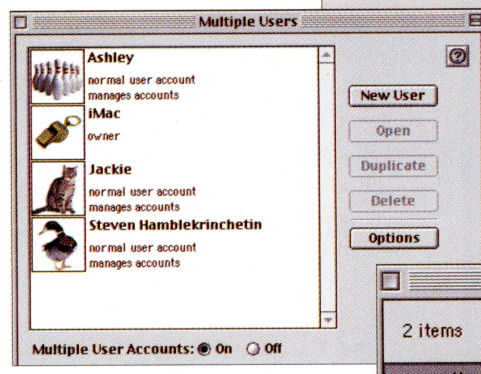
One compelling reason to upgrade to Mac OS 9 is Sherlock 2, the advanced search utility that acquired some new functions in Mac OS 9.

Like the original, Sherlock 2 lets you search anywhere — inside your hard drive, other file servers, and the Internet. Overall, Sherlock 2 is a very powerful search engine, allowing access to many different engines at the same time, and compiling search results in one window.

The new version of Sherlock is separated into channels that divide your search into categories such as Files (for inside your hard drive), the Internet, Shopping, People, Apple, Reference, News, and others. They are represented by icons (complete with tool tips) in a QuickTime-style interface that we found quite agreeable.

You can also add your own channels and download additional search sites into Sherlock 2 via plug-ins that vendors are now making available. Results of your search are sorted by relevance. The news and shopping channels can now include dates, prices, and availability. Assisting in its people search, Sherlock 2 communicates with Lightweight Directory Access Protocol (LDAP) servers at Yahoo, Bigfoot, and Four11, and you will likely get information such as telephone numbers and email addresses.





File encryption (above) was easy. Multiple Users (left) gives each user their own Mac. Network Browser (below) lets you access networks and file servers. Sherlock 2's channels (bottom left) help refine your searches.

Despite the channels, Sherlock 2 did not seem to eliminate the many irrelevant sites that emerge from standard searches.

Not only that, but Sherlock's results were often lacking when compared to those of standard Web-based search engines. For example, several queries we tried in both Sherlock 2 and Google (www.google.com) came up with useful results in the latter but unusable ones in the former, even though the results were ranked by relevance. On a search for the question "What is Bobby Darin's real name?" Sherlock 2's top result did not have anything remotely related, while Google's top result did in fact answer the question (Robert Cassotto).

The shopping channel in particular

In Your Palm

Ever since the iBook, which came out when the Mac OS was still in version 8.6, Apple has been shipping Palm Desktop on every Mac OS CD-ROM. Palm Desktop is software that allows you to synch up your Mac with a handheld computer running the Palm operating system. Palm Desktop ships with some handheld computers, notably the Handspring Visor, but the software doesn't currently ship with the Palm Organizers from 3Com, so having this software on your Mac OS CD saves you a download.

This is a nice, friendly nod from Apple to Palm developers, and it's a gesture that makes it clear that Apple customers might find a jolly good companion in the Palm devices. Also, even if you don't have a Palm device, Palm Desktop provides a robust calendar and contact-management tool that grew out of Apple's own Claris organizer, and you might want to give it a try.

— David Weiss

Game Time on OS 9

Mac OS 9 comes with two things that will turn your Mac into a gaming powerhouse: OpenGL and Game Sprockets. OpenGL is the new standard for 3D graphics authoring, and it opens a whole new world of possibilities for gamers. Thanks to OpenGL, the Macintosh version of Quake 3 Arena requires only 15KB of Mac-specific code to run. Normally a PC game such as that would require months of reprogramming and hundreds of megabytes of new code in order to work on a Mac, and that could translate into fewer games for Mac owners. No more! Games that are written to work in OpenGL can run on any computer that supports OpenGL with a minimum of hassle.

Also, OpenGL allows for some incredible visual effects and stunning speeds. You can play in more realistic worlds with the transparencies and lighting effects that give games that extra zing. And with an OpenGL-compatible graphics card, games can fly along at speeds that boggle the imagination.

Game Sprockets are almost as cool as OpenGL. With Apple's Game Sprockets installed on your computer, you can use all manner of USB joysticks, steering wheels, and controllers to help you conquer any obstacle. Game Sprockets let Mac-compatible game controllers work with a minimum of effort. If you were to head down to the store and pick up a Saitek Cyborg 3D joystick tomorrow, you could take it home and plug it into your iMac running Mac OS 9. The joystick will work with your iMac right out of the box, with no messy installations and no fuss.

— Alex Handy

was useful, coming back with price and availability in addition to standard results. Very handy.

The plug-ins feature to Sherlock 2 was hard to find unless we actually did a search using Sherlock. The instructions for Mac OS 9 say to go to the Sherlock Plug-ins page on the Apple Website, where indeed there is a list of plug-ins. However, it's a list of plug-ins that are already installed, so there is nothing to download, and additional Sherlock plug-ins are not located on the Apple page.

When you do find Sherlock plug-ins, however, they are simple to download and install. We look forward to more plug-ins to Sherlock 2, and for them to be listed and downloadable from a single Web page. We'd also like to see comprehensible instructions on how to install them.

Then too, we suspect some users will be unhappy about the animated advertising banners that appear on their desktops in a Sherlock window that cannot be closed.

Multiple Users

Mac OS 9 is specifically designed for consumers and small or home offices. Apple correctly assumed there would be files that parents or a business owner would not want accessed by others sharing the same computer.

When you hit the button to turn on the Multiple User option, each user can create his or her own identity on the computer. There are three kinds of user access modes within the Multiple Users: Normal, Limited, and Panel. When you log on with your voiceprint (more on that to come) or your written password, you get your own desktop pattern, preferences, Internet start-up page, and so on. Your personal folder also appears on the desktop, in which your documents are stored. However, only the "owner" can access all files, folders, and system controls. The owner has complete control over what software, folders, CD-ROMs, control panels, and printers each user can access.

Within the hard drive there is a folder called Users, and it contains the folders of all users of that particular computer, storing their documents and preferences. There is also a folder within each user's folder called Shared Documents, and those can be accessed by others sharing the computer.

A "normal" user cannot access other users' files. Limited users can only access programs and folders that the "owner" specifies, while Panel users (likely designed for youngsters) have a simplified one-click button interface with only applications and documents they are allowed to run. Thus, limited users can also be restricted from accessing and running CD and DVD-ROM drives, removable storage, printers, and shared folders. However, the multiple-user features can be overridden by simply booting from another hard disk or the CD-ROM, so it's best not to depend on it for really high-level security.

My Voice Is My ... Say What?

With Mac OS 9, Apple has introduced the Voiceprint password, allowing those who use the Multiple User option to log in verbally. Voiceprint gives you a personal log-in based on your voice's unique soundwaves. The computer software recognizes your voice and will not let anyone else log on using your password.

However, the voiceprint feature proved somewhat temperamental. You have to record your voiceprint four separate times, and try to sound both natural and identical each time, which is easier said than done. In our tests, the first try was often successful, but the second try would be rejected as too short, too soft, too loud, or for some other reason. We tried several different greetings, but the voiceprint technology rejected a number of our passphrases.

In the end, the classic, "My Voice Is My Password," worked best. Still, the voiceprint utility remained moody when we tried to log back in using that passphrase. The first time we logged in verbally, the computer said the voice did not match. But the next time we logged in, it matched just fine. We found it easier just to type in a password.

The results also varied from person to person, and from attempt to attempt. We suspect variations in background noise, as well as fluctuations in the user's voice, may contribute to this problem.

Overall we found voice log-ins an innovative idea, but the implementation

is a tad clunky. Until retina scans become commonplace, however, it's a pretty good security idea.

Keychains and Encryption

Keychain is a utility within the new OS (though it has its origins in earlier Mac operating systems) that stores your passwords and passphrases. When you log on with your password or voiceprint, it automatically unlocks your keychain. Note that applications must be written to support Keychain, and at this writing neither of the major Web browsers supports it.

The easiest way to add items to the Keychain was the drag-and-drop approach. We were able to drag Internet locations onto the desktop and then into the Keychain, and we used the same method for Appleshare servers.

Once a server was stored in the Keychain, we had the option of allowing instant access to the volume without authorization (though the system cautioned against this) or prompting us for a deny/allow action. We chose to set it to allow access without authorization and then created an alias of the server on the desktop. After logging out and back in, just a double-click on the server opened it with no password required. Very nice.

Implementing the Keychain was rather confusing, however, and the process was not helped much by Mac OS 9's online Help. Though there was a section for Keychain, some of the procedures weren't outlined clearly, and it took us more than a bit of experimentation to figure out what was going on.

As for encrypting files, this was very easy in Mac OS 9. Just select the file you want to encrypt, then under the File menu select Encrypt. You will need to remember the passphrase to that file in order to open it. However, it also gets automatically added to your Keychain.

Compatibility

A major issue in deciding whether or not to upgrade an operating system is the software that you're using. At this writing, many popular software packages are not compatible with the Mac OS 9. But this should not be a problem for too long. Packages most likely to be affected by the upgrade are font management utilities, anti-virus software, disk tools, and file utilities.

Each day, companies are coming out with patches and updates to Mac OS 9, so by the time you read this many more software packages will have been brought up to date. At this writing, some common packages already have or are developing updates or downloadable patches on their Websites, such as Adobe Type Manager, Adobe Type Reunion, StuffIt Deluxe, RAM Doubler 8, drivers for Hewlett-Packard DeskWriter and DeskJet printers, Netscape's TalkBack Quality Feedback Agent in Communicator 4.5, and others.

Overall

For anyone who searches the Internet, the advances afforded in the new Sherlock 2 will be most attractive. Many new users will also benefit greatly from the Software Update feature, which automatically upgrades your system with updates from the Apple Website.

While Mac OS 9 does not have a steep learning curve, benefits such as voiceprint password, multi-user options, encryption, file sharing over the Internet, AppleScript over TCP/IP, and other advanced features may be elusive to some users. If you have a one-person business, for instance, or if no one else uses your system, there may not be a need for such options.

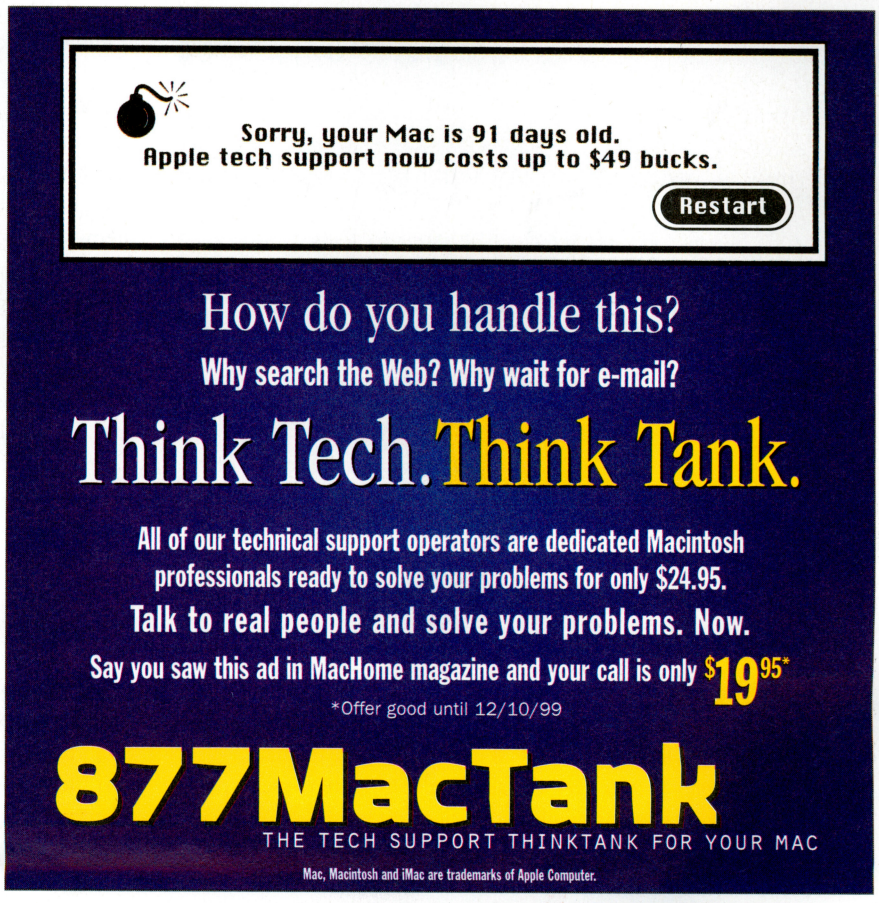
With that in mind, we suggest that you decide whether or not you actually need some of Mac OS 9's more highly touted features, and indeed whether the software you're running is compatible with it, before going through with an upgrade. MH

rating ●●●½

$99 ($20 for Macs purchased on or after 10/5/99, or for iBook and G4, owners regardless of purchase date; see www.apple.com/macos/uptodate for details)
Apple Computer
800-538-9696, www.apple.com

Highly evolved concepts, powerful search functions, enhanced Internet capabilities

Clunky implementation of Keychain and VoicePrint password, animated advertisements on desktop, unclear documentation

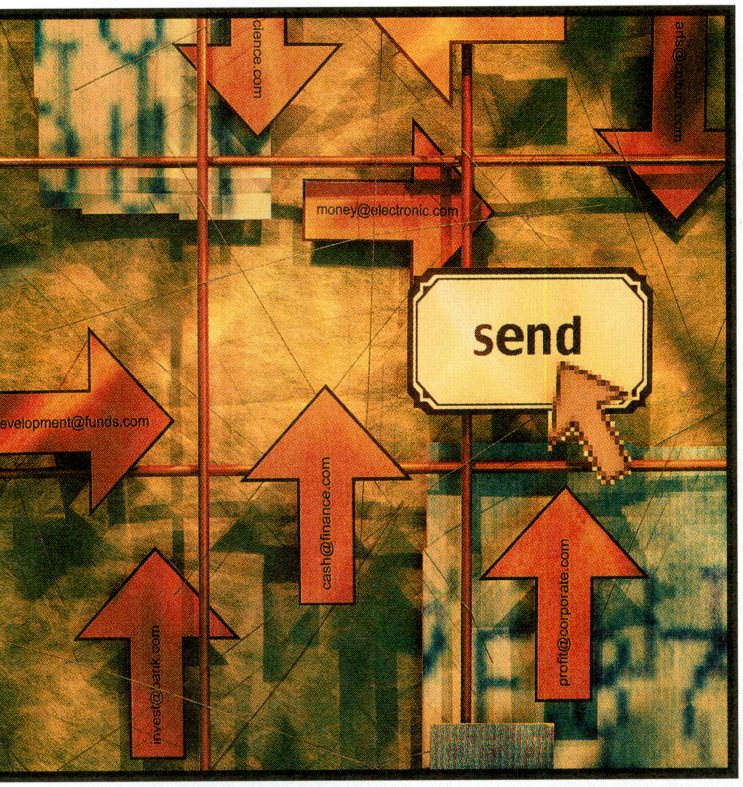


Databasics

Part Two

Reveling in Relationships

By Jeff Battersby



Back in September we looked at how to create a simple database using FileMaker Pro. This month, we're going to show you the magic of "relational" databases. In relational databases, the changes you make to one can also be reflected in the other. So if you need to change a customer's address, for example, you only need to change it in one place. But that's only the beginning.

Getting Started

If you're unfamiliar with how to create a simple database using FileMaker Pro, you'll want to head out to the *MacHome* Website (www.machome.com). There we've posted a copy of the original Databasics article and database, as well as materials that will help you check your work as you complete the database in this article. Also, this tutorial was created using FileMaker Pro 5. If you don't currently own a copy of FileMaker Pro 5, you can run out to *www.filemaker.com* to pick up a demo copy.

The Value of Relationships

The simple database we created in September, which consisted of only one file, is a "flat-file" database, and such databases have some inherent limitations. First, when you use them, you typically end up entering redundant information. Second, the more times you enter the same information, the more likely you are to make a mistake. Third, if you ever need to change the information, you'll have to find every record that contains that information and make the changes individually for each record. In the case of a customer database, in which you keep track of all your customer's orders, for every customer in your database there would be dozens if not hundreds of orders — each with a name, address, and phone number that you entered individually each time your customer placed an order. Now imagine that one of your customers — the one with over a hundred orders — sends a letter asking you to change their address information. In order to change that information you'll need to find every order for that customer and change it. With a relational database, one file could hold all of your customer information and another could hold your customer's orders. These two files could have one common, unique field — a customer number — that links both files together. Now, when

you change your customer's address information in the customer database, it would immediately be reflected in the order database.

The relational databases that we'll create this month will consist of three files: Orders, which will be our main file; Customers, which will store all of our customer information; and Line Items, which will store the details about what our customers have ordered.

Laying the Groundwork

Note: the following information assumes that you have some experience creating a database using FileMaker Pro. If you've never created a database before, get a copy of the September issue of *MacHome* and read the article called "Databasics" or get the article from the *MacHome* Website.

Before you begin, create a new folder on your desktop called Databasics; then you'll need to create each of the three database files we're going to use. Remember that when you initially create a new file in FileMaker, you'll be asked to name your database and save it. Be sure to save it in the new Databasics folder that you just created.

The first file we create will only consist of three fields. Name it "Orders" and then define the following fields using Table 1. Enter the name, select the type of field by selecting the appropriate button, and click Create. Then, if any options apply, click the Options button and make the necessary changes. After each one, type in the name for the next field over the name of the old field. Then click Done.

Next we're going to create a file called "Customers," which will consist of nine fields (See Table 2). The final field will be a calculation, which will require special instructions.

The Full Name field is a special calculation that takes your customer's first name and last name and displays them together as a complete full name. This makes it much easier to view and display your customer's full name.

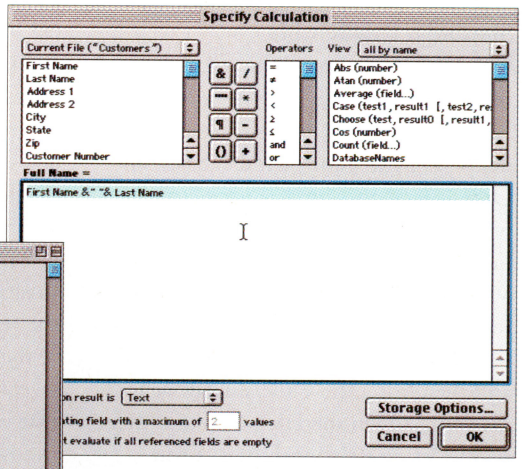


Figure 1 shows you the competed calculation for the Full Name field in the Customers database.

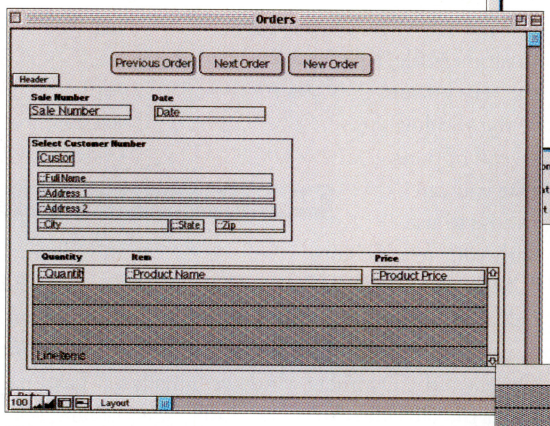


Figure 2: Line up the fields as shown here.

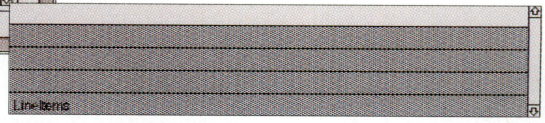


Figure 3: This part is the "portal," a window to a second, related database.

When you create a new calculation field, you will immediately see a Specify Calculation window pop up. Take a minute to look at this window. On the left-hand side of the window you'll see all of your defined fields. In the middle you'll see a collection of standard arithmetic operators, and on the right-hand side you'll see another collection of functions. The bottom portion of the window is where you write out the specifics of your calculation.

Your customer's full name consists of their first name, a space, and then their last name. So this is how we're going to recreate it: Double-click the First Name field in the upper left-hand portion of the calculation window. You should immediately see the field name appear in the calculation window below. Next we need to add one space between the two names. In order to do this we need to let FileMaker Pro know that we're going to add text — a space — to this calculation. You do this by using an ampersand (&) — the code for text. Click the ampersand button one time to add it to your calculation. Now we need to add double quotation marks and place one space between them. Press the double-quote button one time. You should now see your cursor blinking in between the double quotes. Press the spacebar one time, and then use your mouse to move your cursor just to the right of the second quote. You should now see your cursor blinking just to the right of your calculation. Finally we need to tell FileMaker Pro that we're done adding text, and then add the Last Name field. Click the ampersand button one time and then double-click Last Name in the field window. When you're done, your calculation should look like the example in Figure 1. Find the drop-down menu at the bottom of the Specify Calculation window that says "Calculation result is:" and choose Text. When you're done, click the OK button.

The final database that we need to create is called "Line Items." This database is going to store each individual item that is purchased on each order. Table 3 shows you the fields that you'll need to create.

Orders

Field Name	Type	Options
Sale Number	Number	Auto Enter tab: check Serial Number, Validation tab: check Unique
Date	Date	Auto Enter tab: check Creation Date
Customer Number	Number	None

Table 1: Here are the fields for the Orders database.

Starting a Relationship

Now it's time to create the relationships that will tie these three files together. Before we proceed, take a look at the fields we created for each database. The Orders database only has three, two of which match the names of one of the fields in each of the other two databases. We're going to use these fields to create a relationship between the databases.

Open up all three of your databases and then bring the Orders database to the front. Open the File menu and then select Define Relationships… . You should now see a new window that says "Define Relationships for 'Orders'." Click the button that says New, and then select the Customers file that appears in the dialog box, and then click Open. (If you don't see the Customers file you'll need to navigate to the Databasics folder that you created on your Desktop.)

You should now see a new window called Edit Relationship. Take a look at the window to see how it's laid out (see Figure 5). At the top is a field that you use to name the relationship. Just below that are two small windows that contain the field names for the Orders file and the Customers file. At the very bottom of the window are several options that you can choose to use with your relationship.

Customers

Field Name	Type	Options
Customer Number	Number	Auto Enter tab: check Serial Number, Validation tab: check Unique
First Name	Text	None
Last Name	Text	None
Address 1	Text	None
Address 2	Text	None
City	Text	None
State	Text	None
Zip	Text	None
Full Name	Calculation	(See instructions in the article.)

Table 2: *Here are the fields for the Customers Database.*

Make sure that the Relationship Name field says Customers, and then select the Customer Number field in both the Orders and Customers windows. Finally, select the checkbox that says Sort Related Records. A new dialog box will now appear that's called Specify Sort. First double-click Customer Number and then Last Name to move them into the window on the right-hand side. When you're done, click OK two times until you're back at the window that says "Define Relationships for 'Orders.'"

We'll need to repeat this process to create the Line Items relationship. Click the New button, choose the Line Items database, name the relationship Line Items, and select the Sale Number field in both database windows. This time put checks in the boxes that say, "When deleting records in this file, also delete related records" and "Allow creation of related records." By doing this we're telling FileMaker Pro that if we delete an order we also want the items that are related to

that order to be deleted, or if we create a new line item we want it added to the Line Items file.

Investing in Your Looks

In order to make our database useful, we need to create a new layout that will display our customer information and the items they're ordering. Make sure that the Orders database is still in front and then switch to Layout mode. Create a new blank layout by typing Command-N and checking "blank layout," and add one new field just below the Header. When the Specify Field dialog box appears, choose Sale Number and click OK. Repeat this process using the Date and Customer Number fields, arranging them so that they look like the example in Figure 2, making sure that the Customer Number field is placed below the Sale Number and Date fields. Change the Field Options so that you cannot enter the Sale Number or Date fields. To do this, select each field in turn, go up to the Format Menu, choose Field Format..., and then uncheck the box that says Allow entry.

Line Items

Field Name	Type	Options
Sale Number	Number	None
Quantity	Number	None
Product Name	Text	None
Product Price	Number	None

Table 3: The Line Items fields

Enriching Your Relationship

Now it's time to add our first related field. Drag a new field onto the layout and then take a close look at the Specify Field dialog box. At the top of the window is a drop-down menu that says Current File (Orders). When you click that menu you'll see the two relationships that you created earlier. Select the Customers relationship and you'll see all of the fields from the Customers file appear in the Specify Field window. With this relationship selected you should now add the following fields to your layout: Full Name, Address 1, Address 2, City, State, Zip. Be sure to leave the Label box unchecked. Arrange these fields just below Customer Number field that you added earlier.

After you're done adding and arranging these fields, it's time to create a pop-up menu that displays the information that's stored in the customer file.

Hold down the Control key and click on the Customer Number field. A contextual menu will pop up displaying a list of options for that field. Choose Field Format... . Select the radio button that says Pop-up list and then select Pop-up menu. Click on the menu to the right that says <No List Defined> and select the item that says Define Value Lists... . When the Define Value Lists for "Orders" window appears click the button that says New. In the Value List Name Field, type Customers and then select the radio button that says, Use values from field... . You should now see a new window that says, Specify Fields for Value List Customers. Click the button that says Specify File and then locate your Customers file and click the Open button. Select the Customer Number field and then click the check box that says "Also display values from:." You should now see the window below the check box activate. Select Full Name from the list and click OK. Click OK, Done, and then OK again to close all the dialog boxes.

Pathways to the Heart

Portals are special windows that can display information stored in a related file as a list. We're going to use a Portal to display information from and add information to the Line Items file.

Make sure the Orders database is open and active. In Layout Mode, select the Portal tool, which looks like a bracketed square, and click-and-drag a new portal window that's about six inches wide by one-and-a-half inches tall. When you let go of the mouse button the Portal Setup window will appear. Select the pop-up menu that says "Show records from" and select the Line Items relationship. Put a check next to "Allow deletion of portal records" and "Show vertical scroll bar" and then click the OK button.

You should now see a box on your layout that looks like Figure 3. You should note that this portal consists of

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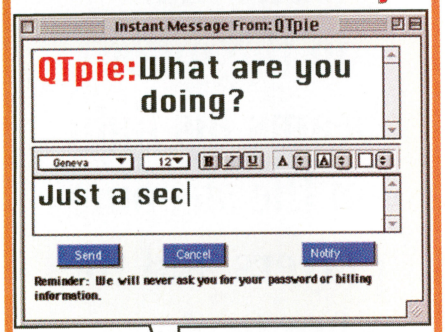
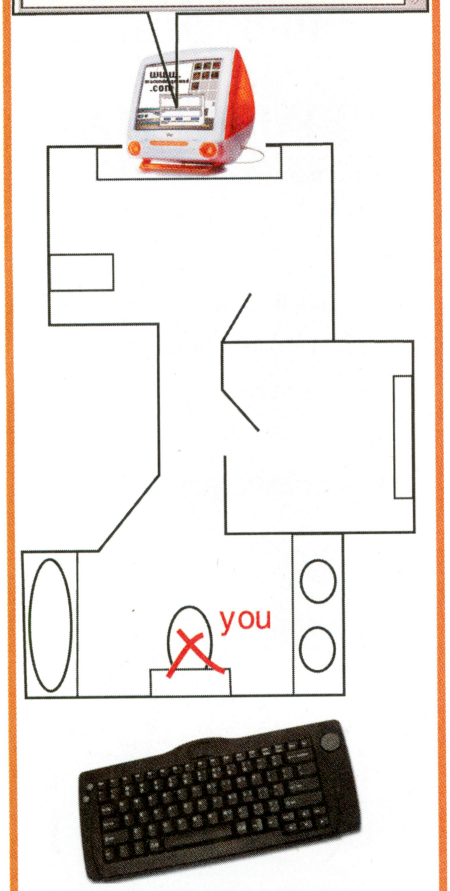
Controls Your Mac From 30 Feet Away!





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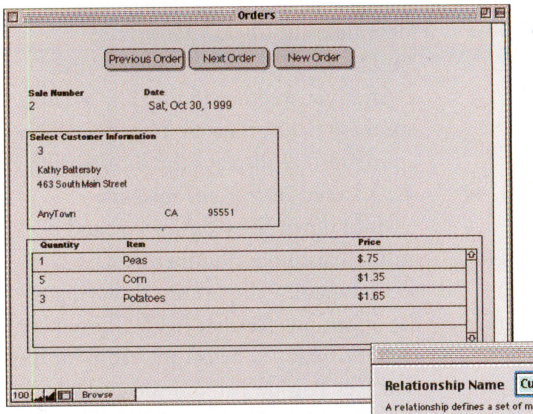

Figure 4: This is what your completed database should look like.

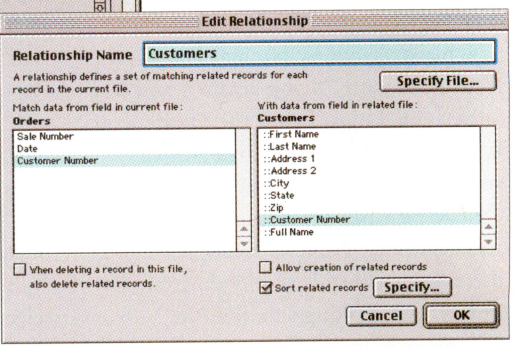

Figure 5: Here's where you match the fields from different files.

once on one of the customer names and look at the information that is now displayed below the customer number. You should see the entire name and address information for the customer that you just selected. Play with the pop-up menu for a few minutes to see how the information changes when you select different customers.

Now tab down to the Portal window and type in a few quantities, items, and prices. When you're done, open up the Line Items file and take a look at the records. You should see all of the items that you just added. If you change a record in the Line Items database, that change will be also be reflected in the Orders database.

several rows. The top row is light in color and the all the subsequent rows are grayed-out. In order to display information from the Line Items files in this Portal window, we need to place fields from the Line Items file inside the light-colored portion of the Portal window. Drag a new field to the Portal window, making sure that the field stays within the lighter-colored top row. When the Specify Field dialog box appears, select the Line Items relationship and add the Quantity field to the Portal. Make sure the Label box is checked. Repeat this process adding the Product Name and Product Price fields to the layout. When you're done, make sure your layout looks like the layout in Figure 4. Then switch over to Browse mode, and we'll try a few things out.

Putting Your Relationship to Work

But first, we need to add some information to our customer database. Bring this file to the front and then add a few records to the database, making sure to include all addressing information. Make sure you add at least three if not more records. (You'll see why when we create our first record in the Orders database.) When you're done, switch back to the Orders database and create a new order.

If it hasn't popped up automatically, click once on the Customer Number field. A menu should pop up that displays a list of your customers with their customer numbers and full names — the same information that you just added to your customer file. Click

Where to Go Next

Now that you've finished creating your first relational database, you can take it to the next level. Try your hand at the following challenges:

1. Make your database easier to use by adding the following buttons: Previous Record; Next Record; New Record; Delete Record.

2. The various products that appear in each line item can also be stored in a separate database. See if you can create a Products database to store product information and change the Line Items database to only collect the sale number, the item number, and the total price information.

As usual, everything you need to check your work will be available on the *MacHome* Website. MH

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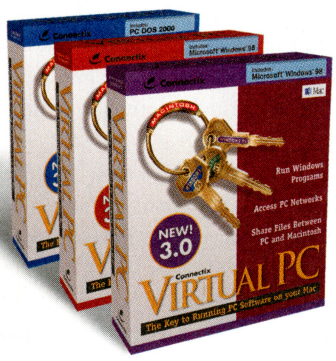

Macs, including the new iMacs, are the best personal computers on the market today. However, compatibility and interoperability between the Mac and the Windows platforms are critical in today's world. Virtual PC is a software solution that brings Windows capabilities right to your Mac! Run Windows-based business, home and educational programs. Access PC networks. Easily share files between your Mac and PC desktops. All on one computer, your Mac!

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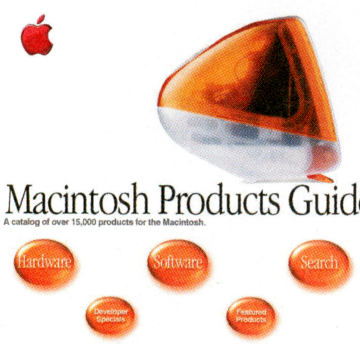
The Mac's Horn of Plenty

For years, many would-be users passed by the Mac because of its perceived lack of third-party products. But Apple is working to put that old myth to rest.

By **Dana Hunter**

Apple's success with the Power Mac G3/G4, iMac, iBook, and PowerBook is certainly putting the company back in the limelight. However, a nagging myth that plagues Apple and the Mac is a perceived lack of third-party products to go with these systems. After all, ancillary software and hardware products are a big part of what makes a computer useful. Whether they're digital cameras, scanners, landscaping software, or uninterruptible power supplies, these products contribute a lot to the Mac's overall coolness.



15,000 Products(!)

To correct this perception of a dearth of Mac products, Apple's Macintosh Products Guide Website (www.apple.com/guide) is a useful resource containing information on well over 15,000 software and hardware products for the Mac. The guide has information on just about everything — games, and graphic applications, programming tools, USB, and FireWire devices — with more being added to the list all the time. There's also a CD-ROM version, which is updated quarterly, so it's not as up-to-date as the website, but still quite handy. You'll find a copy bundled with this issue.

Categories and Subcategories

The Macintosh Products Guide has software and hardware categories, and subcategories. For example, on the Hardware page, pick Printing. The Printing Hardware page presents you with a variety of subcategories that help you further define your product search, such as Dot Matrix Printers, Film Printers, Imagesetters, Inkjet Printers, Laser Printers, and so on. Click the subcategory you'd like to search, and then simply click on the Find button. You're given a list of products that perfectly match your search criteria, and from there you can click on the name of each product to get information on that specific item.

While you can use the Guide's pre-defined category structures to navigate and search for various products and/or technologies, you can also use advanced searching capabilities to define a custom product or technology search. This function lets you search for products by typing a product name, company name, or keyword. If you're outside North America, you can search for products specialized for a particular language, or that are distributed in specific countries.

The guide is available in multiple languages, and Apple is working to include geo-specific product distribution information for products distributed in other countries, such as Italy, the United Kingdom, Sweden, Spain, and others.

Blue Light Specials

The Developer Specials page lets third-party developers place special deals on products, rather like getting special airfares from a airline's site.

Say you've got a friend who's interested in a product. You can help him or her out with the guide's Email-a-Friend function. This feature lets you send product information, once you've narrowed it down, to friends, family, and associates. Click it, fill in the requested information, and the guide sends the product info for you.

Developers can use the Products Guide as a way to get the word out about their products, via a Developer Product Submission link. This service lets developers include and update their product information at no cost.

The Macintosh Products Guide should lay to rest forever the myth about no products existing for the Mac, and should also help with buying decisions. It does so in a no-nonsense manner by providing details on literally thousands of software and hardware products. MH

Visit the Macintosh Products Guide at www.apple.com/guide

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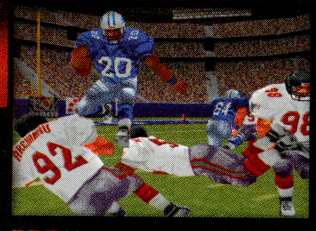

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By Molly Wood

Fax-O-Rama

Faxing From Home — For Free!

Obviously, the first thing you need when you set up your home office is a way for people to reach you. Hopefully, you didn't embark on your working-from-home endeavor without the obvious essentials: a phone and a computer.

But you might not have sprung for a fax machine right off the bat. If not, or if it just seems outdated and you really don't want to sustain yet a third, fourth, or fifth phone line, why not look into an online fax service?

There are a few ways to use the Internet to send a fax. Even better, some of them are free. This month, we'll look at a few of the better free online fax sites. There are no end of sites that require a monthly fee, and only some are Mac compatible. But as long as you're Web-capable, you can find a free fax service for as long as you think you need one.

Online fax services are springing up across the Net. Most services require email capabilities. Some convert incoming faxes to email and send them directly to your inbox for your perusal, while others call for software that you have to download in order to read your faxes. Several of these sites offer more than just fax services, too, branching into email and even voicemail to help you keep on top of all those incoming messages.

Other commercial sites let you send a fax using an application on your Internet-connected computer, rather than by accessing a Web page or sending email. There are several variations on these, but we found it heartbreakingly difficult to find sites that supported the all-important Mac platform. Plus a lot of them had a pesky monthly fee. So here is a short list of the best free options.

Faxing Fancy Free

Among the more well-known free fax sites is eFax (www.efax.com). It's also one of the few that boasts Mac-friendly software. It lets you receive faxes through your email account and read them in a lovely fax-style format using the service's microviewing software.

A few nice things about eFax: It's got handy menu items that let you manipulate the page, in case you've been faxed a horizontal document. The display even features a fax-paper-like information bar across the top that tells you who sent the fax and when.

The only real drawback is that the site assigns you a random telephone number, which, in most cases, is long-distance. Not a very nice thing to do to your in-town contacts, but out-of-town folks won't notice the difference. Also, you can't send faxes using eFax, so you'll need another service for that.

But eFax does offer free voice-to-email and voicemail services to augment your fax-receiving capabilities. (For more on eFax, see our September 1999 issue.)

Beam Thee Up

Speaking of which, you can send free faxes with the TPC.INT "Remote Printing Experiment" (www.tpc.int/fax _cover_auto.html). It doesn't have quite as snappy a name, but it was around before eFax was in diapers. Set up as a group effort for the benefit of Internet users, the Remote Printing Experiment lets you send free faxes via email or a Web form. You'll have to check the coverage list first, as there are some parts of the world (but not many) where you can't send faxes. But once you've established that you can reach your friends in Tunisia, TPC is your best option.

This service is fast and incredibly easy to use; plus, it allows you to send

international faxes for free — it's the only site we found that allows that feat. Unfortunately, as we mentioned, you'll have to combine it with eFax or another service to have a complete setup for sending and receiving your missives.

The Complete Package

For a more diversified free message service, try the TelePost Message Center (www.telepost.com). It has an option called Message Center Lite, which is a free version of the full-featured Message Center Service. It gives you a free, personal phone number where you can receive voicemail and faxes, and you can retrieve your messages online.

The best thing about Message Center Lite — well, the best thing after the part about the free voice mail and faxes — is that you can have your phone number in the area code of your choice, as long as you're within the reach of a listed city.

Plus, you can forward home, business and cell phone calls to your TelePost number so callers can leave messages that you check using just that one handy little phone number.

If you like the Message Center Lite service enough, you might even be tempted to spring for the fee-based extra services (which, of course, is what the folks at TelePost are hoping!).

All three services send you a personalized email with your fax number and, where applicable, your email address for retrieving messages. It's easy, professional, and you have a whole new number to add to that business card.

So, have at it, fax fiends — er, friends. This is but a small listing of the best we found. No doubt there are more, so feel free to look around a bit. Heck, fax us over any suggestions! MH

home Office watch

All Access, All the Time

So you have cable or DSL Internet access. You love it, right? It's super-fast, it's so easy, it's 24-hour access, blah blah blah. There's only one problem. You want it on all the computers in your home office — or even just your home. All at the same time.

Enter the UGate-3000. It's a cable or ADSL modem sharing device that lets you network a single account for up to 256 simultaneous users. It has a built in, 4-port, 10/100 hub that lets users access the Internet simultaneously and without messing with a bunch of expensive connections. And it needs no driver or software as long as TCP/IP is installed.

This means you can configure a local-area network (LAN) in your home office, get a high-speed cable or DSL Internet connection, hook this puppy up and access the Net on every computer in the place, using just one Internet protocol (IP) address. All at the same time. Just like you wanted, right?

UMax provides you with a free domain name within the Ugate.net domain, too. (Well, it's only good for a year, but ...) That's how you can surf from several computers at once: You "name" each computer using a sort of temporary domain name for use on the Internet. But it's not just for surfing: With a domain name, you can become a host machine for a Web or mail server and use it for chats or videoconferencing and more.

The UGate-3000 also boasts high-security firewall protection (not that Macs are all that prone to intruders, but you can't be too careful) that filters all incoming server requests. It's also got security access control, so the domain supervisor can limit any LAN users' access to the Internet or block specific ports to deny some Internet requests. At $400, it's a little expensive, but hey, it's easier than hooking up your own LAN.

UGate-3000, UMax, $399, 800-562-0311, ugate.umax.com

Deregulate This! Low-Cost Dialing

If you're thrifty about your long distance bill, it's a good bet you're on about your 10th long-distance carrier this month. Especially if you're also using a fax line and maybe even a separate phone line for your modem, or several lines in your home office. You might even be trying to configure a 10-10-whatever dialing scheme into your fax machine. Riiiiiiggghhhhht.

Time to consolidate? Consider the Lowest Cost Dialer (formal name pending) from Zoom (not just the modem people anymore). It's a routing device that plugs into any phone or vacant phone jack in your home or home office. You register for the dialer service — and at this point, there's no monthly cost above the one-time cost of the device itself! — which automatically tracks and records the 20 or so cheapest carriers, and routes your long-distance calls to them. Plus, it updates itself monthly — automatically, and free of charge. You can also configure the dialer to update more often, so you can keep up with lightning-fast rate changes.

The Lowest Cost Dialer uses only carriers who bill in increments of six-seconds or less, rather than those who bill by the minute. And it finds the best rates on national and international calls. It works on every extension in the house, and, best of all, there is a four-line model that's just perfect for a home business. Best of all, it's laughably cheap, at right around $50. Save on!

Lowest Cost Dialer, $50, Zoom, 800-631-3116, www.zoom.com

What's Your iMac Saying To You?

Or: How to Decorate in Translucent Lime

By Molly Wood

Apple's industrial design has changed the look and feel of computing, but how is it going to fit into the scheme of your home office? Can you really take a lime green iMac seriously, despite its obvious capabilities? Is this a machine that, while it likely packs the computing punch you're looking for, is going to inspire you to actually do any work?

As Macs and their satellite products get smaller, cuter and more translucent, folks are starting to wonder whether the machines that can earn respect as a business tool. Computer columnist John Dvorak referred to the iBook, available exclusively in blueberry and tangerine, as "girlish."

Tim Bajarin, president of Creative Strategies, a computer consulting firm in San Jose, Calif., writes that the iBook is "not your father's laptop."

Jonathan Ive, who heads Apple's industrial design team, told MacHome last year that he wanted the new iMac to be "groovy, but not in a gimmicky way. … Often an underlying question is, 'Ah, well, it's so transient or flippant.' I don't want it to be that."

And the fact is, these sometimes goofy looking computers can do some grownup-sized work. They've got pretty serious computing capability, in addition to just being pretty. While some of the higher-end models — the iMac DV Special Edition and the G4 — come in a more sedate, industrial graphite, it's possible a colorful new iMac could be the ideal machine to meet your home business needs.

But what about your aesthetic needs?

It depends on what you want your computer to say to you, says Phyl Smith, principal of Working Spaces in San Francisco and author of Creating Workplaces Where People Can Think (Jossey-Bass).

"From my viewpoint, anything that our senses register sends us a message," she says. "So what kind of message are we getting from this?"

Some people have the ability to screen out distracting influences, Smith says. For those people, decorating with a lime, tangerine or even strawberry iMac might not distract from the serious business of working from home.

For others, the mere presence of the brightly colored, almost frivolous translucent plastic — a design that has spawned no end of peripherals and products in the same hues and forms — could serve as a creative muse.

"It provides a choice. It gives us the opportunity to explore," Smith says. "Maybe new directions, either for just our own personalities. Change is what you need for creativity. You need a new idea, new information. Even something like (a computer) could serve that purpose if we assign it that purpose or recognize that it has that potential."

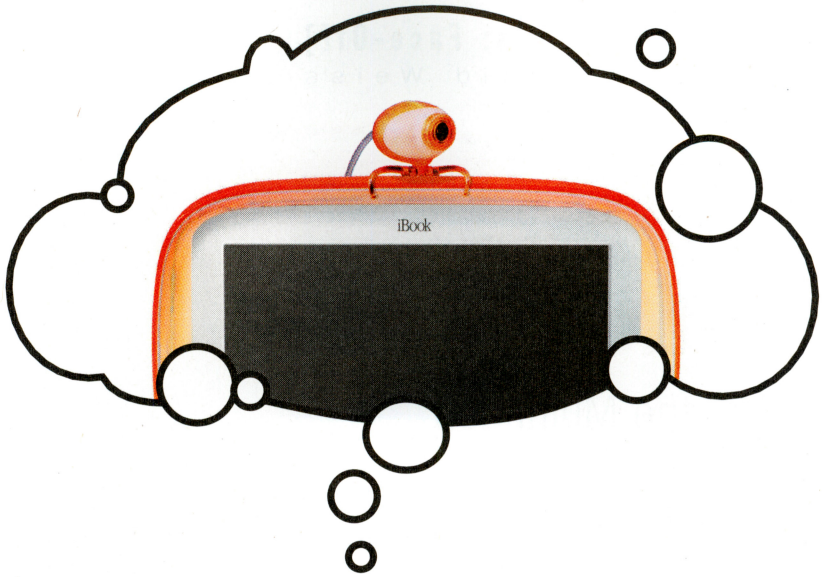
Smith offers some words of caution about making a brightly colored computer the centerpiece of your office — especially if you're easily distracted.

"Does it help you focus, or does it get in the way?" she asks. "There's a whole matrix here about how much attention you need and how much you can screen out distractions."

Don't pick out an iMac just because it's hip, or, even, just because it's pretty, she cautions.

"It's a bad idea if its different color and shape create interference with our thinking and with our focusing," she says. "By demanding our attention without offering good feelings, it's going to get in the way of our focusing."

"We have to resist the temptation to be seduced by its trendiness. Our egos tend to become enlarged when we consider ourselves trendy." MH



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IREZ™ Looking beyond the beyond...

By David Weiss

Multifunction Mania!

The Stylus Scan Vs. the MultiPass

If you work at home, desk space can be a most precious commodity. Hence the "Multifunction Product" (MFP), a vague, abstract moniker for those devices that provide printing, scanning, and faxing, all from the same unit. Here, we look at two MFPs, both for $349 — Epson's Stylus Scan 2000 and Canon's MultiPass C635.

MFP Basics

These are both "top-loading" MFPs, meaning that whether you're loading up the paper tray for printing or you're feeding pages into the unit for faxing, you add paper to the top of the unit rather than to a paper cassette tray, as is the case with most laser printers. MFPs have two paper paths up top, which is why they take up a bit more space than an inkjet printer — one is for printing, and one is for faxing and scanning. This second path is endowed with a CCD (charge coupled device), which acts as a lens, converting light to digital signals. With both of these MFPs, when you want to scan a document, you need to pass the document through the unit, just as you do with a regular fax machine. This setup is a bit less reliable than a flatbed scanner, since it's hard to keep the paper from turning slightly in the path, and it keeps you from assembling experimental collages on the scanner's glass or performing complex maneuvers such as scanning your hand or other bulky items.

Go to www.machome.com/reviews
To find over 1,000 MacHome reviews in our searchable reviews archive.

Stylus Scan 2000

The Stylus Scan 2000 looks more like an inkjet printer than does the MultiPass C635.The scanning/faxing paper path is a very subtle slot across the top, and it also has two scanning buttons — one for starting and one for pausing. The Stylus Scan's scanning/faxing path is a bit awkward to use, since you have to load individual pages in from the front, and when a page is inserted, ready for scanning, it hangs down in front of the unit, rather than sitting in a tray as one would expect. The downside to this arrangement is that you can only put in one page at a time. As with Epson's Stylus Color 740i, you can purchase optional colored lids with which to match the five colors of the iMac and iMac DV.

The MultiPass is a bit shorter and narrower than the Stylus Scan, and it looks a lot less like an inkjet, because it sports a full touch-tone panel with an LCD, similar to what you'd see on a conventional fax machine. Also, its faxing/scanning paper path is a lot more sensible than the one on the Stylus Scan — it's a tray that can hold a small stack of papers.

Both MFPs include a copy of Adobe PhotoDeluxe, with which you can perform basic image editing functions.

Printing

In terms of print quality, there was no comparison — the Stylus Scan came out head and shoulders above the MultiPass. The Stylus Scan's prints came out with gradients that were noticeably smoother. In one test comparing two Photoshop prints, the MultiPass image looked more like a lithograph than a photograph,

with clearly evident spots of color. And with both printers set to their best modes on their highest-quality paper, the MultiPass took 11 minutes to produce an image that the Stylus Scan took a mere 3.5 minutes to print. When printing text, the two MFPs were on more equal footing, but the Stylus Scan was still faster and produced sharper characters. The main reason for this discrepancy is that the Stylus Scan is capable of producing 720 x 1,440 dots per inch (dpi), whereas the MultiPass is only capable of 720 x 360-dpi output. In fact, the Stylus Scan has the same print engine as the venerable Stylus Color 740, which received a high rating from us in December 1998.

Scanning

The scanners in both MFPs are capable of scanning in 600 dpi, which is not tremendously high in the world of scanners — some low-end scanners can go as high as 2,400 dpi. And the more dots per inch, the more detail you'll be able to capture. For many scanning tasks, such as scanning a photo without enlarging it and saving your scan in a digital file you intend to email or put up on the Web, you won't notice the difference. But if you plan on scanning a small portion of an image and blowing it up, with lower resolution you're just going to get big boxy pixels, and with higher resolution you can enlarge your image many times over.

The driver that comes with the MultiPass shows you a tiny window that lets you choose among different settings for Web, color printout, etc., but if you want to customize these settings, you can change the recommended scanning resolution, or click on a button that brings up a second window to make further adjustments for contrast, brightness, and color saturation. And the driver has a magnifying glass tool for zooming in on details.

The Epson driver provides a larger, spiffier looking control panel, but it's more limited than the MultiPass driver, as it lacks a magnifying glass tool for zooming, and tools for tweaking the contrast, brightness, or any other image-manipulation parameters.

In our tests, both scanners came out fairly equal in terms of image quality. The Stylus Scan captured more detail in very small text, but failed to pick up other details, such as shadows in hair. The MultiPass did much better with dark photographic areas, but its small text came out looking fuzzy. Both scanners produced a few artifacts — elements in the scan that are not present in the original. The MultiPass rendered a few black lines as black with a bit of red, while the Stylus Scan drew a hairline of red where there was none in the original. Both scanners performed perfectly well at scanning text and at performing optical character recognition (OCR) to translate letters into editable text.

Faxing

Now, at last, we come to an area in which the MultiPass really shows its mettle. As I said, the MultiPass has a much more capable input tray for faxing, since you can drop a multi-page document in the tray, dial up a number on the panel, and push the Start button, just like on a conventional fax. But it goes a bit deeper than that — the MultiPass has its own built-in fax modem. So, if you have at least two phone lines, you can fax and surf the Web at the same time.

You can't fax and surf at the same time with the Stylus Scan, because it uses the software that's loaded on the Mac combined with the modem you're using. Rather than dial numbers from the front panel, as you do with the MultiPass, you use Epson's Smart Panel software, which mimics the look of a dialing panel. Unfortunately, this software was not available at press time, and we had to use a third-party utility in order to send and receive faxes. Fortunately, a copy of FaxSTF is bundled with every iMac, and that will do the job quite effectively. Epson will release the Smart Panel software in January of 2000, and will ship out the software to anyone who purchased the Stylus Scan before that time.

The Final Decision

If it's faxing that you care most about, and you're not too picky when it comes to color printing, you might want to have a Canon MultiPass C636 on your desk. It certainly does an adequate job of printing, and its scanner is perfectly suitable for scanning most photos, if not the tiniest text. Its stand-alone, multiple-page faxing capabilities, combined with its hearty touch-tone panel, will surely fit the bill. But if you are picky about the quality of your prints, pick up the Epson Stylus Scan 2000. Although its fax unit is awkward to use, and it relies on the modem and controls of your Mac, this MFP will produce by far the most stunning output that will definitely turn some heads. MH

The MultiPass C635 provides a full, stand-alone fax machine.

rating 4 apples

Stylus Scan 2000
$349, Epson America
800-463-7766
www.epson.com
USB Required

Exceptional printer, has optional colored lids

Clunky fax paper input setup, no touch-tone panel, uses your existing modem

rating 3½ apples

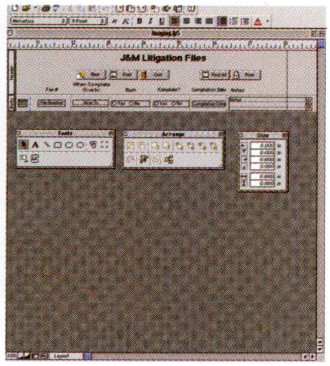
MultiPass C635
$349, Canon Computer Systems, Inc.
800-652-2666
www.ccsi.canon.com
USB Required

Great, stand-alone fax with touch-tone panel and LCD; good paper input setup; small footprint

Printer is grainy and very slow

FileMaker Pro 5 Standard Edition

FileMaker Pro is known for being a simple yet powerful database program. The standard edition of version 5 adds some excellent new features, but it also includes some maddening limitations that will frustrate all but the most basic users.



Version 5 has a new interface. The program now touts a Microsoft Office-like look, complete with button bars that give you access to many of FileMaker's oft-used commands. Those of you interested in something more than looks won't be disappointed either. FileMaker Pro adds more than a dozen major features, including a new layout and report assistant, support for QuickTime 4, three-dimensional layout effects, and a table layout that lets you view your data as if it were in a spreadsheet. Also, value lists — which allow you to easily pick and choose different categories of your data — can now display much more detailed information, so you can choose "New York" from one value list and have another list display only those cities within New York State.

Also notable is the program's new script-importing feature. Now any new database you create can import scripts from other databases you've created. Unfortunately, the program still requires you to store your Print, Find, and Sort settings before creating a script — a thoroughly unintuitive process that should be changed in future releases.

FileMaker Pro has also become more Web-savvy, allowing you to effortlessly create fully functional Web pages that look and behave just like the layouts you create within FileMaker Pro.

Unfortunately, FileMaker, Inc. has put severe file/Web-sharing limitations on the standard version of the program: You're now limited to sharing your database with only 10 other users and, for some absurd reason, you're limited to sharing your intranet-published files with a paltry 10 IP addresses in a 12-hour period — a limitation designed to force you into the much pricier FileMaker Pro 5 Unlimited edition.

The Final Decision As usual, FileMaker Pro remains the most intuitive, easy-to-use database program available. But unless you only plan on using the program personally or in a very small workgroup, you'll be much better served buying the unlimited-user edition or sticking with FileMaker Pro 4.

— Jeff Battersby

rating ♦♦♦½

$249, FileMaker
800-986-2249
www.filemaker.com
PowerPC Required

👍 **Clean new design, excellent Web-publishing features, many new tools and features**

👎 **Severely disabled Web/file-sharing capabilities, ScriptMaker is still too clunky**

Zip 250 USB

Like it or not, eventually you're going to need some sort of storage device. And if you ask me, it might as well be portable, have high capacity, provide snappy transfer speeds, look totally cool, and come with a whole bunch of useful software tools. Now if you have FireWire, you might want to pick up a FireWire drive, since FireWire is faster than USB. But if you have an older iMac or an iBook and just have USB, look no further than Iomega's Zip 250 USB.

In contrast to Iomega's boxier Zip drives, this one is curvy, thin, and can easily fit in a breast pocket. And, inspired by Apple's glitzy new products without trying to match them, Iomega has decked out the Zip 250 USB in a deep, dark-blue translucent plastic. It's got a rounded, crescent moon-shaped window that allows you to read the Zip disk's label. You can lay it flat on your desk or prop it up on its side, to save space, and for this purpose it's got a small rubber stand. The sides are also rubberized.

In terms of performance, the previous USB Zip drive has always been the fastest USB drive we've seen — a tad faster than SuperDisk drives, and way faster than floppy drives. But with this new one we achieved faster speeds still. It can transfer an average of 25MB per minute, whereas the previous USB Zip averaged about 19MB per minute. So it will take only about 10 minutes to fill a whole Zip with movies, MP3s, or whatever else you'd like to put on a disk.

The software bundle comes with tools for automating backups in the background as you work — a process that I hardly noticed was taking place — cataloging information on multiple disks so you can find information even though it's not mounted on your desktop, and a few other useful goodies.

The Final Decision If your Mac lacks FireWire and you need a good USB storage solution, pick up an Iomega Zip 250 USB. It's got it all — good speeds, a comprehensive selection of backup tools, and it's oh-so-light and stylish.

— David Weiss

rating ♦♦♦♦½

$180, Iomega (4-packs of the disks cost @ $70)
800-697-8833
www.iomega.com
USB Required

👍 **Cool design, great performance, generous software bundle, comes with one disk**

👎 **Disks are a tad pricey**

He can fetch, roll over, play dead and wreak havoc on your disk drive.

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www.falconsafety.com

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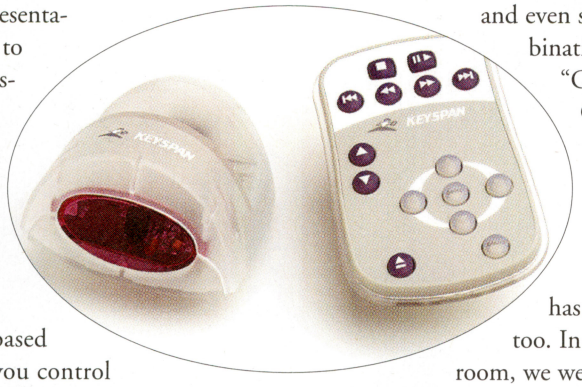
Digital Media Remote

Rocking out with your Apple CD player when the phone rings from across the room? Giving a PowerPoint presentation and need to advance, hands-free, to a new slide? Check out Keyspan's Digital Media Remote.



This USB-based remote gives you control over DVD, CD, MP3, and QuickTime players, as well as presentation programs such as PowerPoint. It's a small, attractively styled, 15-key infrared remote control with a receiver unit that plugs into your Mac.

It's a bit expensive, at $79, since similar products are available for Windows machines for around $25, but it works without a flaw — there are no hidden bugs or unpleasant surprises. It's easy to set up: It comes with software that helps you with "key-mapping," which programs the buttons on the remote to correspond to any keyboard key and even simple combinations, such as "Command O." Even better, you can key-map per program.

The remote has great range, too. In our test room, we were able to control programs from nearly every angle, even though the remote is technically good only in line-of-sight use. The receiver even has a little red indicator light, which tells you that your signal is getting through.

It's not just for entertainment. The Digital Media Remote's benefits as a presentation device, allowing you to switch slides in a program such as PowerPoint, are obvious, too. One small complaint about it isn't really a complaint: The Digital Media Remote works so well, that you want it to do more, such as have macros that turn on the computer, launch the MP3 player, select a playlist … you get the idea.

The Final Decision The Digital Media Remote is darned near perfect. Our only beef is the price, but as the market becomes flooded with similar devices, it will surely go down. We hope so. Because then this little device will be truly perfect.

— Molly Wood

rating ●●●●½

$79, Keyspan
510-222-0131
www.keyspan.com
USB Required

Works without hitches, easy to install and use

Too expensive

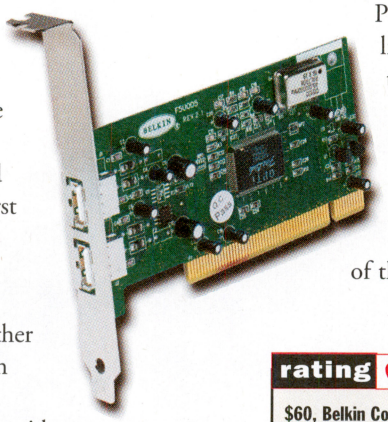
Belkin USB BusPort

This product — a card that provides USB to Macs that lack it — is beautiful in its simplicity: It installs in a PCI slot, such as those you'd find on the original Power Mac G3, or perhaps an older 9500. Slap this in your Mac and — voila! — you've got USB.

Why is this a big deal? Because since all new Macs are being built only with USB or FireWire, most of the makers of third-party hardware, such as digital cameras, scanners, MP3 players, and printers, are making their wares match Apple's current product line. So if you have an older model and you want a nice new scanner, but the scanner is only available in USB or parallel (that's a PC standard, son), what to do?

I'll tell you what to do. Get this card. I've got one in the original beige G3 on my desk, and suddenly I'm able to connect to all the latest and greatest gadgets — the translucent USB wonders we've been writing about in *MacHome*. Previously I was limited to devices with standard serial or ADB connectors.

Installing the card is simple, but it's not really for the squeamish, as you'll have to open up your Mac and reach pretty far into the motherboard area to get it seated correctly. After that, just add the software (about eight extensions to your System Folder) and you're on your way.



The card I tried didn't work the first time, but on the advice of Belkin's tech support, I changed it to another PCI slot, and from then on it worked swimmingly. They said it sometimes works better if you get it farther away from the computer's power supply. The aforementioned gadgets worked without a hitch on my Mac, including Ricoh's RDC-5300 Digital Camera, which shows up on the desktop just like a disk drive. Yow! Scanners, printers, the Rio 500 MP3 player, and even USB keyboards and mice worked perfectly with this card.

The Final Decision

If you have an older Mac with PCI slots, there's no reason to live in the past. Don't let the translucent world of USB products pass you by. If you can't let go of your older machine for the wonders of an iMac, iBook or G4, this is your ticket to the future of the Mac.

— John Poultney

rating ●●●●½

$60, Belkin Components
800-223-5546
www.belkin.com

Handily connects your older Mac to new USB peripherals

Mysterious installation problem left us puzzled as to why it worked in one PCI slot but not another

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Mac

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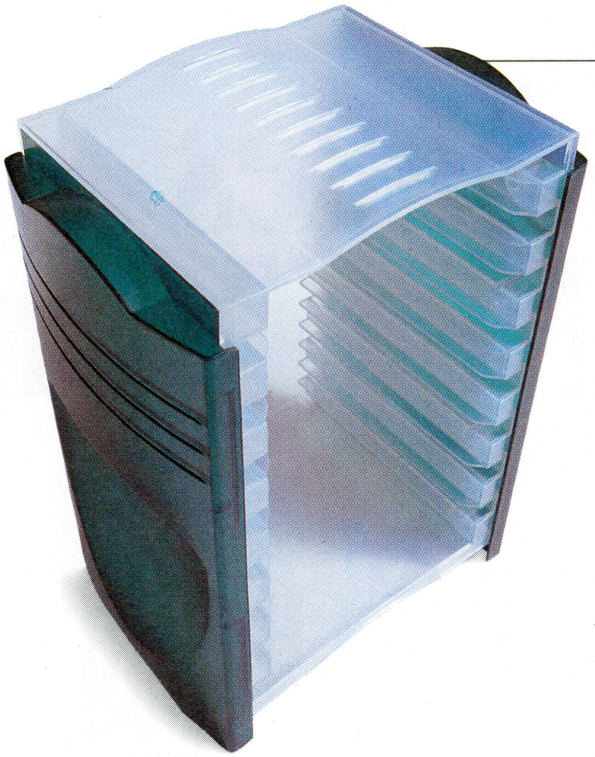


ALLSOP StaggerStack.

Unit holds 16 CDs with extra storage on top. Staggered design provides easy CD identification and removal. 60299

EPSON Stylus 740i Color Printer.

1440 x 720 DPI of photo quality color. Compatible with Windows '98, '95 3.1x, NT, Macintosh, USB. 4-color Micro Piezo Inkjet. Adobe PhotoDeluxe, Broderbund, etc. 6PPM black, 5PPM color. 1-year overnight exchange warranty, 86439

IMATION USB SuperDisk Drive.

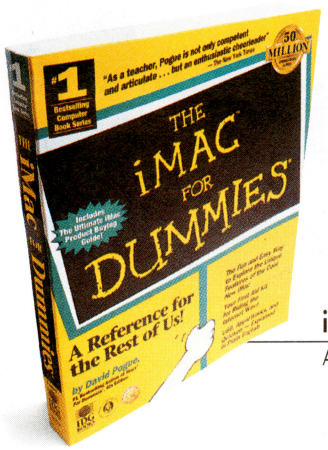
120MB capacity. USB interface. Uses 1.44 3½" floppies and 120MB SuperDisk. iMac compatible. 49319

NEWER USB uDrive.

1.4MB floppy drive. USB interface, iMac compatible. Styled to match iMac. Stackable with other Newer uLine peripherals. 49709

AGFA SnapScan USB Color Scanner.

600 x 1200 PPI optical, 36 bit. 9600 x 9600 DPI interpolated. 8½" x 11⅞" scanning. USB interface, iMac and Windows '98 compatible. Agfa Scanwise, Corel Print House Magic. Caere's Omnipage LE 5.0 for OCR. 46149



iMac for Dummies.

A reference for the rest of us. 63018

Your girlfriend's not the only one who can accessorize at Sears.

ALLSOP CD Transit.
Stores a combination of 10 CDs, DVDs or CD-ROMs. 60114

NEWER USB uHub.
7 ports. Cross-platform capability. Styled to match iMac. Stackable with other Newer uLine peripherals. 8 indicator lights, AC adapter. 49719

IOMEGA USB Zip Drive.
100MB capacity. USB interface. Windows and iMac compatible. 49229

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SEARS

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Satisfaction Guaranteed or Your Money Back.
Prices may vary in Alaska, Hawaii and Puerto Rico.

Graphire Pen Tablet and Mouse

Pen tablets allow you to draw, freely moving your wrist, and that's not quite easily done with a mouse. Also, pen tablets provide different levels of pressure, so you can use them to simulate the varying weight of pencil marks or the swelling strokes of a brush. The Graphire tablet is a very capable input device for a very low price, and it also includes a scrolling mouse.

The tablet area measures 4 x 5 inches, which is a very small area and one reason for the low price. You wouldn't want to use this with a large monitor, because the tablet "maps" to the screen, and not only is it very difficult to control with large monitors, but it's easy to run off the edge of the tablet with your pen. But on smaller monitors, such as those of iMacs or iBooks, the Graphire is a perfect size. Like most tablets, it's got an overlay so you can pop in a photo to try your hand at tracing.

The pen can sense 512 levels of pressure, which is double that of the Pen Partner, Wacom's earlier tablet that was also $99. It also has two buttons instead of one near the tip, and each can be programmed to perform clicks, double-clicks, or click-and-hold. As with all Wacom pen tablets, the pen comes with an eraser — just flip it over to rub out your marks.

Graphire also includes MetaCreations' Painter Classic, which is worth the price tag right there. This program mimics hundreds of pencils, inks, brushes, papers, and textures, and it makes it easy to dive in and experiment.

The scrolling mouse is a wonderful addition. In any finder window, and in most application windows, instead of clicking the up-and-down arrows to move through your document, you just turn a wheel that sits between the two mouse buttons. This is great for Web pages, and because the wheel is also a clicker, you can tear through pages and links like a surf punk though the waves. It will be hard to go back once you've sampled the freedom of a scrolling mouse.

The Final Decision The Graphire package has got a fairly full-featured pen tablet with the addition of a scrolling mouse and excellent software — and for $99, you can't go wrong.

— David Weiss

rating 4½

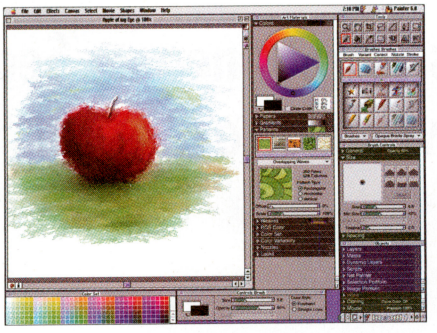
$99, Wacom
800-922-9348
www.wacom.com
USB Required

Pen has two buttons plus eraser, good pressure sensitivity, comes with scrolling mouse, great software, great price

Too small for larger monitors

Painter 6

MetaCreations' Painter is a stunning creativity tool that expertly mimics the subtle nuances of natural media, and version 6 rolls in several important new features that enhance realism and give the user added flexibility.



One key addition to the program is the ability to paint with depth. This revolutionary feature imitates the physical shape of paint as it is applied to canvas, creating shadows and highlights to mark the oil's natural crevices and ridges. Another remarkable feature is the furry airbrush. You can create an image with realistic fur and hair with just a few simple strokes. And like all other Painter brushes, the furry airbrush is completely customizable, allowing you to adjust the length and dispersion of hair.

It's important to note that you must own a pressure-sensitive drawing tablet to get the most out of Painter 6. The application makes extensive use of pressure sensitivity to mimic natural media — the harder you press the stylus to the tablet, the wider and more opaque the brush stroke.

It takes a surprising amount of power to imitate the pencil and paintbrush. Although our iMac handled simple brushes with ease, more complex brushes bogged down the system. In several instances, the on-screen rendering of the brush stroke lagged behind the movement of the cursor by several seconds. This makes it almost impossible to make quick, accurate strokes with complex brushes on slower systems — 200MHz or slower.

Painter's interface remains somewhat cluttered, and like other MetaCreations products, it bucks many user interface standards. Instead of familiar light-gray palettes, Painter 6 makes use of darker gray, green, and purple palettes that incorporate anti-aliased text and menus. Thankfully, the Open and Save dialog boxes remain the Mac OS standard.

The Final Decision Although it can be more costly than an initial investment in oils and charcoals, Painter 6 offers traditional artists new levels of freedom and flexibility. And of course, there's never any mess to clean up.

— Chris McVeigh

rating 4

$399, MetaCreations
800-846-0111
www.metacreations.com
PowerPC Required

Expert replication of natural media, fantastic feature set

Complex brushes bog down slower systems, interface somewhat cluttered

It doesn't come with a standard floppy drive.

After all, why would you want a standard floppy drive.

So you bought an iMac. And now you are in the market for a disk drive that will allow you the capacity to enjoy our multimedia world. Sounds like a plan.

But what about your old floppy disks, you ask? Not to worry. Get a SuperDisk drive, the drive that accepts 120 MB SuperDisk diskettes and your old floppies, giving you easy and immediate access to all of your files, old and new. Maxell SuperDisk diskettes use the same reliable technology as your floppies, and even function in virtually the same way.

Hey, you're going to buy a drive for that iMac. Make sure it's one that can handle all of your big ideas. And, equally important, your smaller ones.

For more information, visit our website at www.maxell-data.com

maxell
THE MEDIA MATTERS

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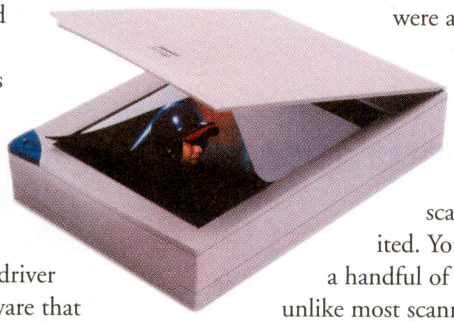
Epson Perfection 610

It's not every day you run into a 36-bit color, 1200 dots-per-inch (dpi) scanner that's this inexpensive. And the Epson Perfection 610 is such a one — pretty darned powerful for its price range. If you can get past the limited driver and clunky software that comes with it, you'll be rewarded with one heck of a powerful scanner.



The Perfection 610 can easily mingle with its competition without fear of being outclassed. It can go toe-to-toe with scanners such as the Umax Astra 2100u when it comes to image quality and scanning speed. A typical 300-dpi scan takes around two minutes, and previews are almost immediate. (Unfortunately, you can only get a preview from within the TWAIN driver.) We scanned one of the new $20 bills at 600 dpi, and you could read all the hidden text around Mr. Hamilton's head with ease.

However, if the Perfection 610 were a restaurant with good food, the waiters would be a bit on the surly side. For starters, the TWAIN driver that you use to actually scan images is severely limited. You can only choose from a handful of preselected resolutions, unlike most scanners, which allow you to choose any resolution you'd like. And conspicuously missing from the list of available resolutions is 72 dpi, which is the standard for email or the Web — the closest match is 75 dpi. Also, there's no magnifying glass tool, so you must save a scan and leave the TWAIN driver in order to zoom in on an image.

The image-editing and viewing software included is HotShots, an all-purpose image acquisition program that was obviously not made for the Mac, because you can't move windows on top of each other. Installing the bundled software is a hassle, as you must first install the scanner driver, restart your Mac, and run the install program a second time. There is no way to install all the software at once.

The Final Decision If you need a high-quality scanner on the cheap, check out the Perfection 610. As long as you're willing to put up with the irritating software, this scanner will allow you to capture some mighty impressive images.

— Alex Handy

rating 🍎🍎🍎

$150, Epson
800-463-7766
www.epson.com

👍 **Excellent hardware resolution, great price**

👎 **Clunky software installation, limited software tools and driver**

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WWW.ANDREAELECTRONICS.COM

HL-1240 Laser Printer

In terms of home printers, we used to have two choices: color inkjets that were inexpensive at the outset but require pricey, low-capacity ink cartridges, or monochrome laser printers that were expensive at the outset but didn't require additional investments for a good many years. But Brother now offers you a third choice: an inexpensive laser printer that's also inexpensive to maintain over the long haul.

The HL-1240 is large and sturdy, with a 250-sheet paper cassette that can accommodate up to legal-sized paper and has a mechanical indicator on the front showing you about how much paper is inside. For envelopes, card stock, and other oddly shaped paper, it's got a manual feed slot on the front, with adjustable guides that help you keep your addresses perfectly centered on your envelopes.

The HL-1240 is capable of putting down 600 dots per inch, which is pretty good resolution, even though more expensive printers can double that. With the HL-1240, you can still print out 4-point italic type, and — with a magnifying glass — you'll be able to read it. But one reason why the printer is so cheap is that it lacks PostScript. That won't affect your word-processing documents, but if you print out PDFs (portable document format, such as those manuals you need to open with Adobe Acrobat), they are going to come out a tad fuzzy. Some files, such as those with EPS (encapsulated PostScript) images, will come out with inaccuracies or won't print at all.

In terms of speed, it's adequate when in its Normal mode — that is, it comes out a tad slower than $1,000 lasers. But in this mode, text was bit jaggedy. In its Best mode, the text came out with nary a jag, but it took twice as long: A 15-page Microsoft Word document took a little over four minutes.

The Final Decision The HL-1240 is a good, solid, workhorse of a printer. But if you require PostScript, you might want to spring for a more expensive printer, and if you want razor-sharp text from the HL-1240, you'll have to put up with some less-than-blazing speeds.

— David Weiss

rating 🍎🍎🍎🍎

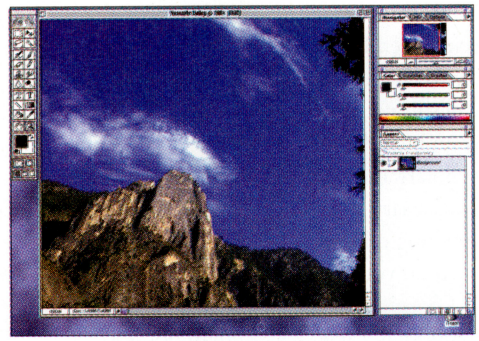
$300, Brother
800-284-4329
www.brother.com
USB Required

👍 **Very inexpensive, sturdy, supports legal-sized paper, adjustable manual feed slot**

👎 **Slow on the best settings, a bit coarse on the normal settings, no PostScript**

Adobe Photoshop 5.0 LE

Adobe Photoshop 5.0 LE (limited edition) is a pared-down version of the company's industry standard image-editing application. Despite a few key omissions, Photoshop LE is actually a very capable image editor. The application offers a collection of image filters, up to 99 image layers, and all the standard tools found in the more robust Photoshop 5.5. Open an image you've scanned or captured with a digital camera, and you can transform it into a masterpiece with just a little patience. Photoshop LE's range of color-correction controls allow you to add contrast to images or shift color values so that your daughter's skin tones appear a natural rosy red.



Photoshop LE lacks the interactive, step-by-step tutorials that make Adobe PhotoDeluxe a good imaging-editing package for novice users. Learning to use Photoshop LE is an exercise in trial and error; practice makes perfect. On the other hand, its similarity to its big sister makes migration to the full application a lot less stressful for burgeoning graphic artists. The applications are almost identical, from the layout of the menus to the content of dialog boxes. An upgrade to the full package requires minimal learning, if any at all. Adobe Photoshop 5.5 is a rather expensive package ($599), however, and unfortunately, there is no discount for owners of Photoshop LE.

Adobe Photoshop LE excludes several advanced features that make its big sister a must-have for professional graphic designers. Omitted features include support for editable channels, CMYK and Duotone color, multiple undos, batch processing, vector path tools, and GIF animation. Don't recognize those terms? Don't worry. If you don't know what they are, it's unlikely you will need them.

The Final Decision Adobe Photoshop LE is a great choice for artists making their initial foray into the domain of digital design. At $99, it's a fraction of the price of its big sister, and yet it's about as capable.

— Chris McVeigh

rating 🍎🍎🍎🍎

$99, Adobe Systems
800-833-6687
www.adobe.com
PowerPC Required

👍 **Great price; capable, industry standard**

👎 **A little complicated for novice users, no upgrade path to full package**

Publishing on a Shoestring

A Look at Corel Print Office 2000

By Jeff Battersby

Whether you've wanted to create a banner, brochure, business cards, or any other basic business document, there's been an unfortunate dearth of design products available for the Mac. Sure, you could use AppleWorks or Microsoft Word, or you could pick up a copy of InDesign or Quark, but you could end up with too little muscle in the design realm or a complex program with an inordinately large price tag.

Enter Corel Print Office 2000. This program brings an incredibly useful collection of tools and templates to your desktop at a price that's so incredibly low it's almost laughable.

Step into My Office

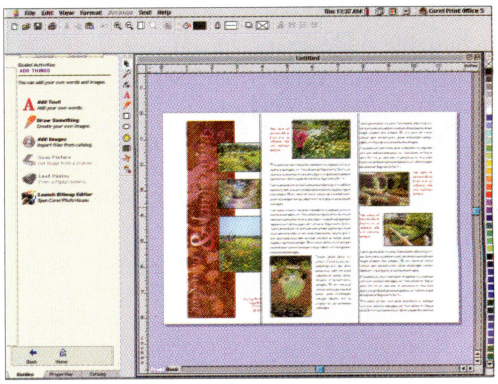
The program's work environment consists of four main parts: a toolbar, document window, color palette, and Notebook. The most unique part of the program is the Notebook — a multi-tabbed window that appears alongside your document window. The Notebook uses a Web browser-like interface and helps guide you through the creation of your project. From the Notebook you can access images, CDs, the Web, and a multitude of Corel Print Office 2000 resources. As you work on your project, the Notebook displays context-sensitive information about the object you're currently editing.

Printing Power

While the program's drawing tools are nothing compared to Adobe InDesign, they are perfectly adequate for the majority of needs. The program also includes Corel Photo House 5, an excellent entry-level image-editing program that allows you to apply professional-quality effects to your photos without requiring you to have professional-level experience. Photo House uses the same interface as Print Office, which significantly minimizes the learning curve. You'll also find tools for changing the texture and shape of text. "Word wraps" are containers of varying shapes that can bend words into myriad, unusual forms.

The program comes with a huge collection of templates for virtually any type of document imaginable. Résumés, banners, brochures, greeting cards, tickets, rain checks, calendars, you name it — there's likely to be a Print Office template that will suit your needs. To top it off, the program includes more than 35,000 pieces of clip art and photographs, making it unnecessary, at least initially, to purchase anything other than Print Office to get started on your way to document creation.

Corel Print Office 2000 has a few minor shortcomings, the most significant of which is in the area of documentation. Admittedly, the program is quite easy to use, but the documentation borders on the nonexistent. The manual is a sparse 106 pages and, other than a QuickTime-based slideshow, there is no truly useful tutorial. The second problem arises from the three CDs that ship with the program. If you don't have the first Print Office CD in your CD-ROM drive, you'll only see generic templates when you attempt to create a new document. This wouldn't be so bad except that you have to switch back to the Finder to replace the CD, rather than being able to change CDs from within the program. Print Office allows you to export any of your designs to HTML so they can be displayed on the Web, which is a bonus. Unfortunately, the Web pages that get exported — including basic text — are made up completely of graphics, making the Web pages uneditable and slow to download.



The Final Decision

Minor caveats aside, Corel Print Office 2000 is an excellent design tool that places powerful features and plentiful resources into your hands for little more than pocket change. MH

rating 4½

Corel Print Office 2000
$65, Corel
800-772-6735
www.corel.com
PowerPC Required

Easy-to-use, thousands of templates, extraordinarily low price

Weak documentation, not CD-Savvy, poor HTML exportation.

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By Jackie Dove

Audio 4 All

Create Your Own Top 40 with SoundJam MP

Okay, admit it — you've been itching to convert a few of your favorite songs to MP3. Well, now's your chance. While working, walking down the street, riding the bus, or driving your car, anytime is a good time for MP3.

If you haven't been on an extended vacation to Mars, you have at least heard of MP3. Of all the compressed and streaming audio file formats on the Web (RealAudio and Shockwave come to mind), MP3 is the most popular, as well as the most controversial. While record companies squawk bloody murder about piracy, musicians and consumers are burning up the path to MP3 Websites.

With MP3, you can create and update your own personal music collection with near CD-quality sound, often without spending a dime. And it's legal! No wonder "MP3" has outpaced "sex" as the number-one search term on the Web.

So much for politics. You want tunes! You want them now! And why not? It's easy. It's fun. The following workshop will demonstrate how to encode and play MP3 files using SoundJam MP from Casady & Greene ($50 for the CD-ROM and patch cord plus a top-notch instruction book; $40 for the download version). While there are a variety of Macintosh MP3 encoders and players out there, we like SoundJam MP for its flexibility and ease of use.

In the first example, we'll show you how to encode music from CD-ROMs, which as you know, begin life in digital format. But in the second example (see sidebar), we'll show you how to convert sound from an analog cassette tape into an MP3 file. You can use a similar technique to convert your old vinyl LPs, as well.

But watch out — MP3 can be addictive. We have spent more time than we'd care to admit finding, encoding, streaming, and converting music for this workshop. But at least we can pretend it's work!

What the Heck Is MP3?

Before you start playing with MP3, you'll want to know exactly what it is and why it's assumed such a ubiquitous place among Web audiophiles. MP3 started out as MPEG, a compression technology originally developed by the film industry for audio and video, so broadcast-quality signals could be distributed by CD-ROM or over networks, such as the Internet.

MP3 is the latest incarnation of MPEG compression technology. MPEG (short for Moving Picture Experts Group) is a "lossy" compression scheme that is based on an analysis of human hearing. With lossy compression, information is lost in the translation, but that is not always such a bad thing, as sometimes the loss is not noticeable.

MPEG is based on a psychoacoustic analysis of human hearing. The engineers who created MPEG compression analyzed what the ear and brain actually perceive when listening to a range of frequencies, and thus determined which information could be cut before compression in order to shrink the file size. MPEG compression is thus applied after a substantial amount of information is cut.

Now, MPEG actually comes in several layers, distinguished by the complexity of the algorithm used to compress a file. There's MPEG 1 (layer 1), MPEG 2 (layer 2), and now MPEG 3 (layer 3), the last now popularly referred to as MP3. The higher the layer, the more computing power needed to encode the file (say, convert it from a CD's uncompressed file format into MP3), and the higher computing power needed on the listener's end to decode it. In short, the higher the layer, the better the compression ratio.

The sound quality of MP3 really is awesome. Despite a 12-1 compression ratio (a 24MB file can be compressed down to 2.1MB file), MP3 sounds similar in quality to an audio CD. And, because of their small size, MP3 files download in minutes, are ready to store in your hard drive, transfer to portable players such as the Diamond Rio 500 (which, incidentally, comes bundled with SoundJam), email to your friends, or place on a Website for download.

Enter SoundJam MP

Because SoundJam is both an MP3 encoder and player, you can use it to listen to MP3 files downloaded or streamed from the Web, as well as to convert audio files from CD, AIFF (Audio Interchange File Format, an uncompressed Mac file format), QuickTime, or WAV (the Windows audio format).

If you have a Mac with a PowerPC 603 processor running at 100MHz or faster, OS 7.6.1 or later, and Sound Manager 3.2 (a system extension) or later, then you can run SoundJam MP. If you've installed Mac OS 9 or have one of the new Power Mac G4s, be sure to download SoundJam version 1.1.1, which supports both the new OS and QDesign's compressed audio files.

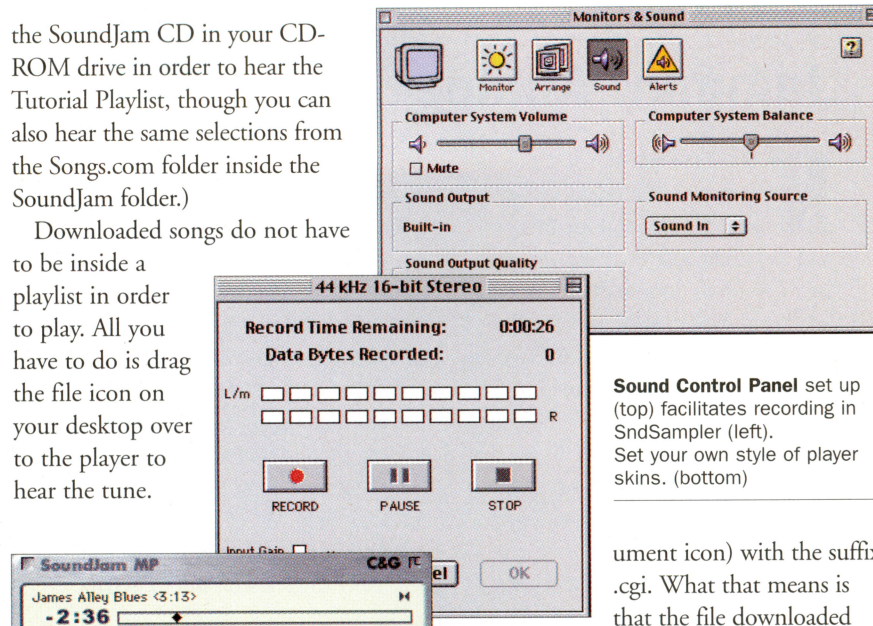
Your Own Top 40 (or 100)

After installing the program onto your hard drive, you'll probably want to build your own playlist by selecting New Playlist under the File menu. A playlist is your own list of songs that you've arranged in a particular order. SoundJam lets you create as many playlists as you want to suit your many moods. Go to one of the several MP3 Websites conveniently listed in the Web menu, download songs to your hard drive, and drag them into the playlist.

Another playlist, called a Master Playlist, is located within the SoundJam folder, and it automatically compiles all the audio you have downloaded, streamed, or encoded. A Music folder contains the actual sound files.

The SoundJam CD-ROM comes with a playlist of 100 free songs, but if you're like us, you'll probably want to search for your own music online. (Be sure to keep the SoundJam CD in your CD-ROM drive in order to hear the Tutorial Playlist, though you can also hear the same selections from the Songs.com folder inside the SoundJam folder.)

Downloaded songs do not have to be inside a playlist in order to play. All you have to do is drag the file icon on your desktop over to the player to hear the tune.



Sound Control Panel set up (top) facilitates recording in SndSampler (left). Set your own style of player skins. (bottom)

However, there is an added advantage to having the songs in a playlist, as information such as the name of the song, artist, album, and time also appear in your playlist and on the MP3 player window as the song plays. That information comes from the CDDB Internet CD Database (www.cddb.com).

Listening in SoundJam

If you go to one of the hot new MP3 Websites that are conveniently listed under the Web menu in SoundJam, it seems fairly straightforward to find a song and simply stream and play or download and play. But things are not as simple as they should be.

For instance, when we downloaded a song from MP3.com with the Internet Explorer browser, it arrived on our hard drive as a generic icon (a blank white document icon) with the suffix .cgi. What that means is that the file downloaded with the wrong suffix. The suffix is an important indicator of the file type, and .cgi is not .mp3.

Thus, if you drag that icon into the player, it will not play because SoundJam is not reading it as an MP3 file. You must first change the file name, giving it a suffix of .mp3, and then drag it on to the SoundJam player for a listen.

If you have designated SoundJam as your default Internet MP3 player in the SoundJam preferences, the generic file will be transformed into a SoundJam icon when the song plays. If you want to keep the song, drag it into your Music folder or playlist.

From the playlist, double-click the file icon or drag it onto the SoundJam player, and music will pour out of your speakers. Remember to store the files you download from the Internet, as a playlist is simply a pointer to the real music file that is stored on your hard drive.

In Netscape, downloading and streaming MP3s is more complex. In order to hear MP3 in Netscape using SoundJam, you must configure the Netscape preferences as per the SoundJam instructions.

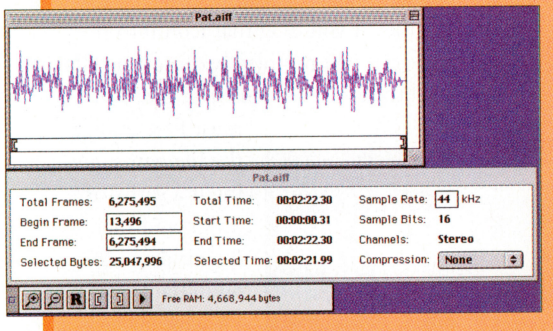
Since Netscape naturally seeks

Jammin' Analog

Not all of the music you'd like to hear is digital in origin. In fact much of it probably resides on old LPs and cassettes. But you can still use SoundJam to encode your old favorites into MP3.

We encoded a song called Hope by singer/songwriter Pat Cuviello, derived from the cassette recording (with his kind permission). To get the hardware set up properly, we used an inexpensive 1/8-inch minijack-to-mini jack cable.

We plugged one end of the jack into the Sound port (the one with the microphone icon) of an iMac, (though it worked equally well with a variety of other Macs). The other end of the jack went into the headphone jack of the boombox recording source.



Now get ready to record. Check your Sound control panel and make sure that your sound volume is audible, and that your Sound Monitoring Source is set to Sound In.

You will need a recording program to digitize the analog sound. In this workshop, we tried a number of recording shareware applications, such as Ultra Recorder, AudioCorder, and Quick Recorder, all of which worked quite well to capture sound.

However, if you intend to edit your sound file, you will need a sound editing program. We chose SndSampler, a shareware application ($30) which we downloaded from the allmacintish.com Website.

To digitize the cassette selection, we launched SndSampler. Under the File menu, we selected New. That gives you a menu with several choices. We recorded at the highest level (which also makes for rather a large file). We selected the input source as Sound In, a sample rate of 44100, and sample bits of 16. We checked the box allowing us to record directly to disk, then Stereo and Play Through (which lets you hear the song as you are recording). We clicked OK.

With SndSampler open, we clicked Record and turned on the tape player. We watched the waveform in the open window as we recorded. We cut a small bit from the song, right in the window. SndSampler let us save the selection as an AIFF file.

Jammin' with Cassettes

When we were satisfied with file, we launched SoundJam.

To convert your AIFF into an MP3 file, use the SoundJam Converter. Under the Window menu select Converter. A window opens allowing you to configure your conversion. We converted using the SoundJam MP3 Encoder and configured the bit rate, sample rate, channels, and stereo mode. We clicked OK.

Then we dragged the Pat AIFF file to the Converter window and clicked the Start Converting button to start the conversion process. When SoundJam was finished converting the file, it placed it into the Master Play List, which automatically opened. We then double-clicked on the MP3 file and played it in the SoundJam player. The compressed file is now 2.2MB rather than 25MB.

www.allmacintosh.com/audiomac.html
search for:
SndSampler 4, Ultra Recorder, AudioCorder, Quick Recorder
Diamond Multimedia Rio 500, $270
www.rioport.com

QuickTime as the audio/video application, we also found it necessary to go through each of the applications in the preferences, find the ones that pertained to MPEG, and change the application to SoundJam. It took a couple of tries to get everything properly converted, but eventually we were able to both stream and download successfully from Netscape. Also, we found it necessary to quit Netscape and restart it before the music would successfully stream.

Ripping from a CD

Ripping — which is to say, converting music from an audio CD into an MP3 file — is a piece of cake. All that is required is a CD-ROM drive for you to encode any track on a CD to MP3.

Under the Window menu, select Converter. Put the CD in the drive. When your Audio CD list pops up on the desktop, simply drag the track you wish to encode to the Converter Window. With the SoundJam Encoder selected, click the Start Converting button. A three-minute song was reduced to just 3MB as an MP3 file. Cool.

Gimme Skin

While we've been concentrating on SoundJam's considerable audio capabilities, there is a visual aspect to SoundJam that cannot be ignored: skins. The first thing you'll probably want to do is to skin your player, which is to say, change its appearance. You can do that using the Skin menu, which comes with a number of built-in skins. However, such casings may not necessarily suit your delicate tastes. They didn't do anything for us.

What to do? We went to *www.soundjammp.com/sp/skins.html* and downloaded this really neat-looking skin called Lapis, as shown. There are lots and lots of skins. Pick the skins you like, download them, unstuff them with Stuffit expander, and drag the file into your Skins folder. It will then appear on the Skins menu.

$50, Sound Jam MP,
www.soundjammp.com
Casady & Greene, $50

By Jackie Dove

Million Pet March

Petopia.com, ASPCA: Saving Lives on the Net

As an animal lover and the recent adoptee of two kittens (Lisa and Lila, in case anyone is interested), Bookmarks takes a, well, rather extraordinary interest in Websites that are of the non-human animal persuasion. One that caught our eye is Petopia.com, which calls itself the "Internet Pet Paradise."

Petopia.com is a great place to find information and advice about your furry, feathered, and finned companion, but it's also a sophisticated ecommerce site wherein you can buy pet food, communicate with other pet guardians, and find the resources you need to keep your friend happy, healthy, and frisky.

"I wanted to create a different kind of Internet pet site — a site where pet lovers could come and not only find a variety of great pet products, but also discover an incredible sense of community where they could find answers to questions, freely dialogue with other pet-lovers, and read informative articles that address real issues that pet lovers face on a daily basis," says Andrea Reisman, Chief Executive Petopian.

Petopia.com devotes sections to popular companion animals such as dogs, cats, fish, birds, and other small creatures. A "bottomless bowl" promotion on the site lets you buy your friend's food in bulk, and then gives you the same amount for free.

Petopia.com is a cheerful site with an amiable color scheme that uses cartoon images and fun fonts. A main menu tops most pages, so it's easy to get from one part of the site to another without multiple mouse clicks, while simple text links lead you to articles and information. Sections such as Lifestyle, New Pets, Pet Care, Pet Talk, and My Pet, are available in addition to all the stuff you can buy.

There's a distressing side of the pet industry that Petopia.com is trying to rectify: pet overpopulation. Most people do not witness the tragedy of euthanasia for healthy, unwanted dogs and cats who do not get adopted from overcrowded shelters.

Petopia.com has teamed up with the American Society for the Prevention of Cruelty to Animals (ASPCA) to create the Million Pet Mercy Mission, a project that aims to find homes for 1 million of the estimated 6 million adoptable animals that will be available next year. The program officially begins January 1, 2000, but if you want a new companion, Petopia wants to hear from you now.

"The Million Pet Mercy Mission is about uniting the efforts of pet-loving organizations across the nation to save 1 million pets from being euthanized as a form of population control," Reisman says. "Through our united efforts we are going to aggressively promote the spay and neutering of animals, turbo-charge pet adoptions through the use of online cyber-shelters, and slow the inflow of pets into shelters by focusing on behavioral issues and providing information on proper pet care and training."

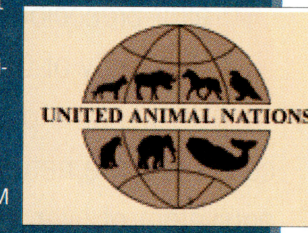
If you register at Petopia.com, it will donate $1 to the ASPCA. The site's holiday store, featuring more than a 1,000 different seasonal products, is slated to go online in plenty of time for the holidays. Meow!

Petopia.com, www.petopia.com

Animal Nation

When companion animals are healthy and well, they need only the basics: food, shelter, and love. The point of a Website called IMOM (short for In Memory of Magic, the founder's black cat) is to provide financial assistance when guardians of four-footed and winged family members do not have the money to pay for veterinary care.

The IMOM Website provides information about animals in need and animals who have been successfully helped. IMOM campaigns against puppy mills that breed dogs for profit, dog fighting, and other abuse.



While many international agencies rescue humans from wars and natural disasters, United Animals Nations, based in Sacramento, California, concentrates on animal victims. UAN believes that animal victims deserve help too.

UAN's projects include: Emergency Animal Rescue Service; Pigeon Shoots, to help communities ban this brutal practice, the ZigZag Memorial Reward for Animal Cruelty Convictions, offering rewards for evidence in cruelty cases, and more.

The Animal Legal Defense Fund (ADLF), is an advocacy law firm in which attorneys specialize in animal issues. ALDF's attorneys protect the rights of animals used in research, in zoos, and promote strict adherence to humane laws.

A recent campaign is targeted toward new legislation that would make airlines safer for animal travel.

IMOM, www.imom.org
United Animal Nations, www.uan.org
Animal Legal Defense Fund, www.aldf.org

By Molly Wood

Dialing for Aliens

Apple's Flagships Power Search for Extraterrestrials

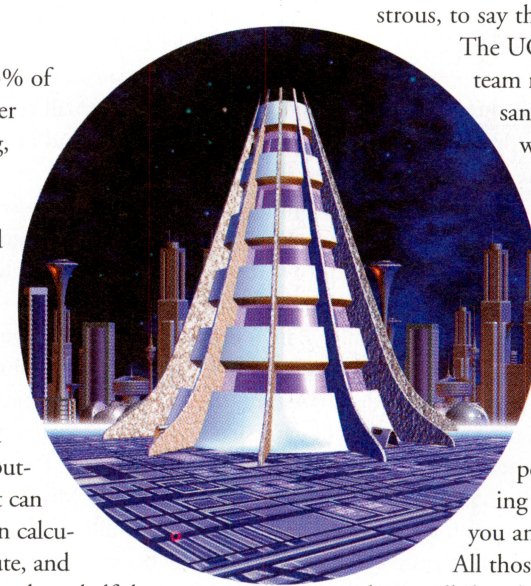
Call it precocious. Just five months out of the gate, the University of California at Berkeley's alien-seeking SETI@home project is already the world's largest supercomputer. The network of home computers has performed the equivalent of over 100,000 years of computing, and more than a million home computer users have teamed up to listen for extraterrestrial radio frequencies.

SETI@home (www.setiathome.com), sponsored by UC Berkeley, lets Internet users everywhere link their computers to analyze radio frequencies from space. (SETI stands for the Search for Extraterrestrial Intelligence.) Just like in the movie "*Contact*," searchers are looking for definable radio patterns that could indicate a big old alien phone call. Only instead of using giant radio telescopes, they're linking their home computers to analyze chunks of data from a giant radio telescope.

With One CPU

There have been a few similar projects in the past, most notably RC5, aimed at encryption-cracking. But none have gained the attention or interest that SETI@home has, and none have performed anywhere near the computing. To participate, you just download the free SETI@home software at the project's Website.

The software uses a computer's spare processing power to analyze data it receives from the Arecibo Space Telescope in Puerto Rico. Think of spare processing power as the 95% of your brain power you're not using, and imagine a software program that could use that dormant gray matter to do really hard math problems.



If you've got a 300 MHz computer processor that can perform 1 billion calculations per minute, and you're only doing about half that, you've got a whole lot of CPU space to spare. And SETI researchers want it. Now.

"We don't really know if we're going to find anything, but perhaps the significant thing is that when you stack us up against other computing projects that have been done — supercomputers and machines like that — we've done much more computing than any of them," says Dr. David Anderson, a former UC Berkeley professor who's now the project director. "This is the largest computing project that anybody has ever done."

Anderson says his former graduate student, David Gedye, hit upon the idea of using computers in large numbers to analyze the enormous number of radio signals floating around space.

The task of digging through those signals — and detecting the weak ones that may have come the farthest — is monstrous, to say the least.

The UC Berkeley SETI team realized that thousands of computers waste spare processor cycles every day, either through inactivity or through useless programs like screen savers. They decided to "borrow" that power, from willing participants like you and your family. All those computers analyzing all that data, researchers say, could increase the possibility that the collective human ear might be turned to the sky at just the right moment. The SETI team says it could be just a matter of having enough ears.

Putting Out the Vibe

The SETI@home software works either as an application you launch yourself, or as a background application that runs off spare power when you're not working.

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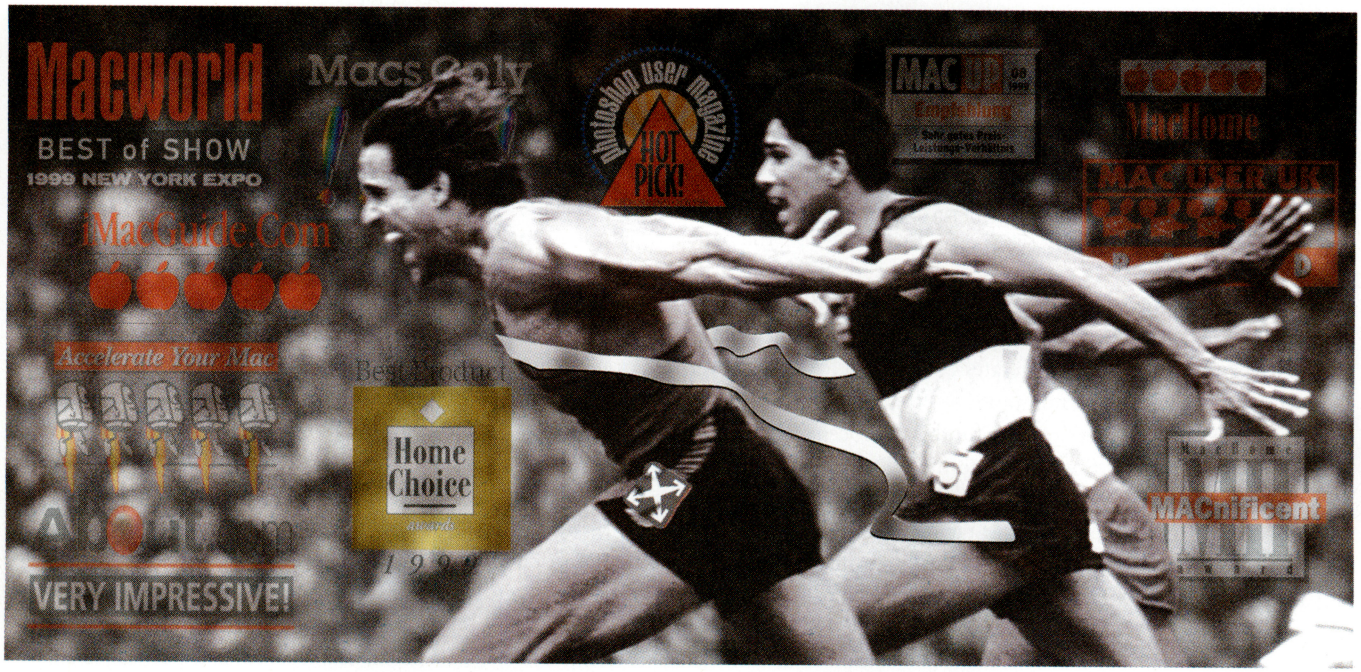

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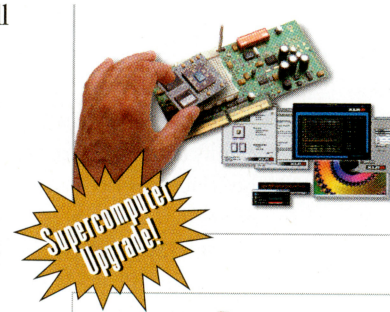

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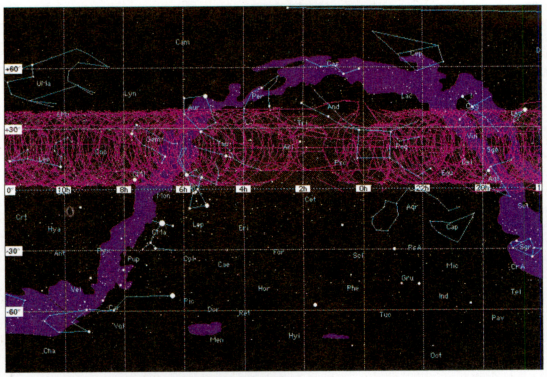

Computers running SETI@home have helped the Arecibo telescope analyze data from about 28 percent of the sky.

The background application appears as a screen saver.

As the software works, it generates colorful, attractive charts and graphs — in fact, one of the project's earliest funding sources back in 1998 was Paramount Pictures, which wanted to use the images to promote an upcoming "Star Trek" film. (Purists say getting rid of the graphs makes the program analyze faster; the software can be customized for this and other options.) More importantly, it links your computer to a vast network of amateur astronomers.

It's understood among SETI@home's various participants that we might not find any signal; either because the aliens haven't sent one, because they're just not out there, or because the Arecibo telescope can only see 28 percent of the sky.

So instead of a race to find The Message, SETI@home has spawned an increasingly competitive online fracas as participants spar over whose computer or group of computers can break down the largest amounts of white noise, asteroid fly-bys, earth radio interference and other sound-making phenomena.

"We don't know if anybody is out there or how close they are or if they're trying to send us a signal or trying to not send us a signal," says Dr. David Anderson, director of the SETI@home project. "I view it as kind of like the lottery: big payoff, most likely a fairly low probability.

"(But) in terms of the significance of the project, it's defining a new way of doing scientific super-computing — tying together potentially all the processors on the Internet into one supercomputer."

The Macintosh Difference

So far, Macs have emerged as serious players in the Great Sky Sweep.

Huge chunks of data from the Arecibo telescope (Arecibo is, in fact, the telescope that was featured in the early part of *Contact*, and was also on the *X Files*) are recorded onto high-density tapes each day. Arecibo lacks a high-bandwidth Internet connection, so the data tapes are snail-mailed to Berkeley. The data are then divided into 250KB chunks called "work units," which are sent from the SETI@home server to participating computers. Ladies and gentlemen, start your processors!

According to the SETI@home Website, folks running the Macintosh operating system are completing work units nearly 30% faster than participants using Pentium/Windows systems. And Macs have turned in the second highest number of completed work units.

The Mac OS ranks fourth among operating systems in use among project participants, a high ranking given the number of actual Mac users out there, Anderson says. Moreover, those Mac OS folks alone have analyzed 7,274.57 years worth of data, at an average CPU time of 20 hours, 59 minutes and 07.8 seconds per work unit. That computing time is faster than each of the top three operating systems: Windows NT, Windows 98, and Windows 95, though all three have analyzed far more work units than Mac systems.

The Macintosh feats — particularly the performance of the new G4 and the increasingly faster iMacs — have not escaped notice.

"It runs quite well on an iMac," admits the project's chief scientist, Dan Werthimer.

The SETI@home project breaks down involvement not only by operating systems, but also by platforms, CPU types, location, country and more. Speedy Macs are consistently at the top of the lists that matter.

"Apple users have contributed more than their sheer numbers," acknowledges Anderson.

"It has been confirmed that SETI@home participants running operating systems such as UNIX and the Mac OS are achieving much better performance than Windows," boasts SETI Station (www.flex.com/~daniel/SETI/), a Website for SETI and Macintosh enthusiasts.

Searching By Numbers

The important thing about SETI@home, say project promoters and enthusiasts alike, is that anyone can do it, as long as they have Internet access and a passable processor. Plus, the project lends a little more legitimacy to the science of alien-hunting.

In the early 1990s, the federal government cut funding for SETI programs, ridiculing those who participated in the search as hunters of "little green men." But in recent years, the idea has taken on greater legitimacy, and evolved into a branch of science as well-considered as physics, biology or astronomy.

Part of the reason for that is that radio SETI — examining radio frequencies in search of an extraterrestrial pattern or message — is simply more reasonable than thinking aliens will just turn up in some snazzy new spaceship.

After all, if another society produces radio waves in the same staggering amounts that we humans do, and if one of those societies were to deliberately attempt to send an extremely strong message, it's fairly likely that signal would eventually be able to reach Earth. On the other hand, the possibility of aliens physically traveling thousands of light years is extremely unlikely.

"I think (SETI@home) has had a big impact in teaching people what SETI is — the distinction between radio SETI versus looking for crop circles and flying saucers," Anderson says. "If we can get 5 million people convinced of the importance of doing SETI, then that could have some impact on federal policy in the future."

Our strides are small but significant, the SETI team says.

"No, we haven't bagged any aliens yet," says chief scientist Werthimer. "But earthlings are just learning how to do this. You have to give us 50 or 100 years."

Or 50 or 100 G4s. MH

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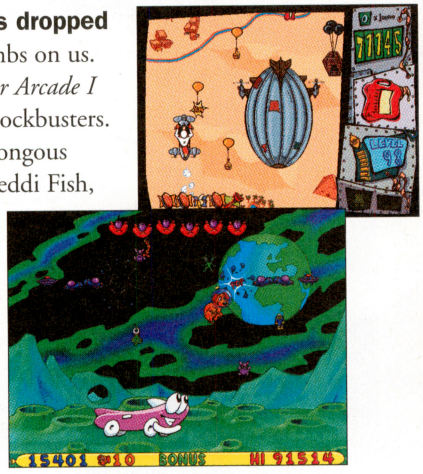
Wow! That's a Humongous Arcade!



Humongous Entertainment has dropped two large neon neon-colored bombs on us. Those bombs are call *Super Duper Arcade I* and *II*, and they are quite powerful blockbusters. Both titles feature your favorite Humongous characters: Putt-Putt, Pajama Sam, Freddi Fish, and Spy Fox. The whole gang is here for eight of the rockingest arcade games you'll see come down the pike. These are great games for kids, since they feature nonviolent action with faces your kids know and love. The bundles are great values, since each of these games was previously released on its own. Though you may not have seen some of them, if your kids are fans of Humongous' characters, you'll recognize some of these games from before. *Super Duper Arcade I* features *Putt-Putt and Pep's Balloon-O-Rama*, *Pajama Sam's Sock Works*, *Freddi Fish and Luther's Water Worries*, and *Spy Fox in Cheese Chase*. The second installment is comprised of *Putt-Putt and Pep's Dog on a Stick*, *Pajama Sam's Lost and Found*, *Freddi Fish and Luther's Maze Madness*, and *Spy Fox in Hold the Mustard*. Phew, that's a mouthful!
$20, Humongous Entertainment, 800-499-8386, www.humongous.com

Not Just for Paint Samples Anymore

You know those stacks of color splotches you use to pick out a wall color at the paint store? Thanks to *Brain Quest*, those paint sample stacks are turning into decks of trivia for the young. *Brain Quest* is wildly popular these days, and far be it from IBM to miss an opportunity to digitize a classic learning idea. Thus, in what could easily be viewed as an effort to muscle in on Mr. Paint Sample's territory, IBM has released a new *Brain Quest* software series. Each title, ranging from grade one to grade six, features thousands of questions about all manner of things, from "What continent is in all four hemispheres?" to "What are the names of the four Marx Brothers?" (Essential knowledge for any well-adjusted child.) The titles are out this very moment, and each one comes with a stack of questions in paint-sample form. Perhaps paint-sample stacks and software can live in harmony after all.
$20, IBM, 800-320-8377, www.ibm.com/pc/athome

Thinking Bunny Huggers

The Reader Rabbit series of learning titles has been around for a long time. Yet always, the main focus of the series has been the standard reading, writing, and 'rithmatic. All that's about to change, however. With Reader Rabbit Thinking Adventure Ages 4 to 6, the book-loving rabbit will be venturing into the realm of creative thinking skills. This is one hot topic for learning software these days, and it should help put some fire in the belly of an aging series. With a copy of Reader Rabbit Thinking Adventure Ages 4 to 6, your young 'uns might begin to loosen their death grip on the Teletubbies. Not that squeezing the life out of a Teletubby is necessarily a bad thing ...
$30, The Learning Company,
800-716-8506, www.learningco.com

Rug Burns and Diaper Rash

The Rugrats are coming! You know them, your kids love them, and you can tolerate them. What could be better? *Rugrats* has become one of the most popular kids' shows on TV, and for awhile, it's also been one of the most popular lines of kids' software as well. Unfortunately, *Rugrats* software on the Mac has been scarce. All that should be changing as soon as Mattel Media and Nickelodeon team up to bring us *Rugrats Mystery Adventure*. This children's game focuses on a string of mysteries that need to be solved. Tommy Pickles, Private Dick, must untangle the sordid web of lies that surrounds such conundrums as who drank Susie's milk and did Angelica swipe Phil and Lil's buried treasure? To find out, you'll just have to play.
Mattel Media, www.mattel.com

We Goofed!

Oh geez, we messed up in November. As it turns out, *Toy Story 2* will be released on Thanksgiving, November 25, and all *Toy Story 2* software titles will be released on November 23. Oh, and the voice of Buzz Lightyear will be provided by Tim Allen, not Mel Gibson. Sorry for any inconvenience we may have caused.

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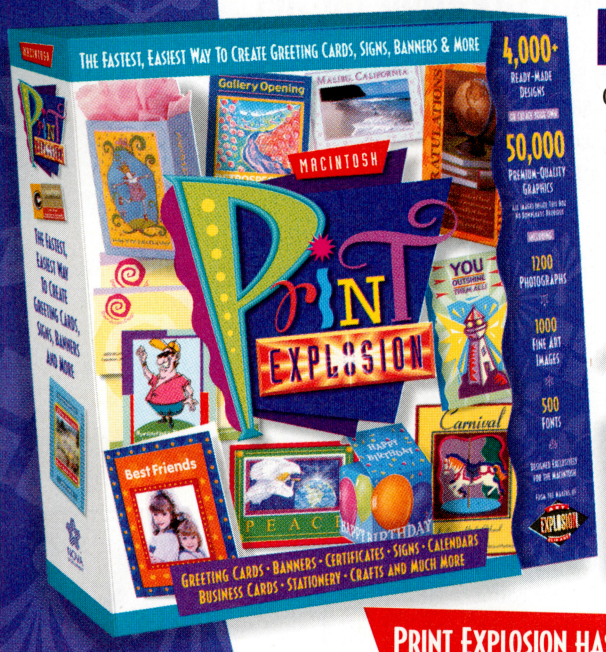

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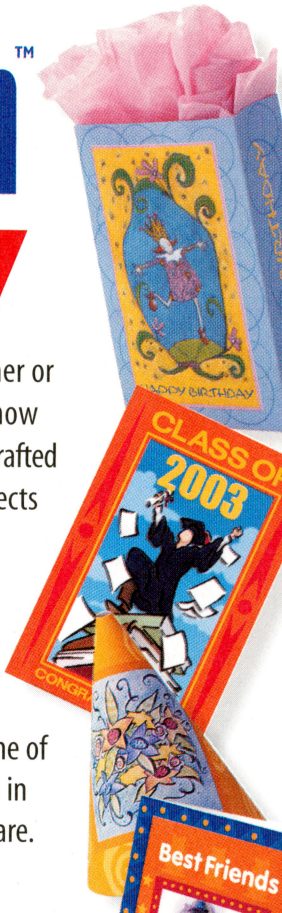

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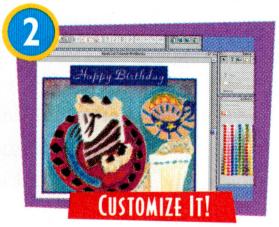

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Smart Steps Kindergarten, First, and Second Grades

$20, DK Interactive
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www.dk.com
Ages 4 to 8

Smart Steps from Dorling Kindersley Interactive is a series of educational tools disguised as games. The three-CD-ROM series covers kindergarten, first, and second grades, and each CD is loaded with fun and challenging learning activities. The activities cover math, reading, comprehension, practical science, and just plain fun stuff to do.

Your guide is Woody, the "action adventure pencil." Woody provides hints and suggestions throughout each CD. The first stop is the playroom. Kids can explore the room by clicking on objects to see what surprises they hold.

Children earn stickers by correctly completing activities. There are more than 100 fun learning activities in *Smart Steps Kindergarten* and more than 300 each in the first- and second-grade volumes. Once stickers are collected, they can be placed in a sticker book to complete pictures in color.

The first- and second-grade CDs cover the entire core curriculum for each level, according to the packaging.

The games move along slowly, and sometimes my six-year-old found this to be more than a little frustrating. My children have been using Macs for years, and when they click on something they expect immediate action. All three CDs run at a bit of a snail's pace. This may be good for the very young, but for most kids the game's reactions need to be a lot faster.

On the technical side, the programs don't like to have virtual memory or other programs running while the CD-ROM is being used. My 9500/150 with a 128MB of RAM (running OS 8.6) crashed several times while using the game or trying to print. The programs worked just fine on my iBook (160MB RAM running OS 9) while I was using MS Word with the launcher open.

All in all this is a solid set of learning software. While the programs are a bit slow and fussy, there's a lot to learn here.

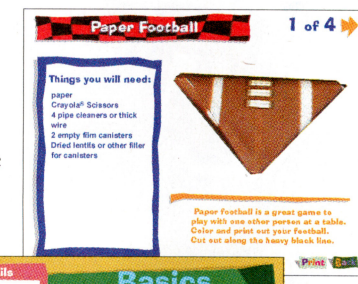
— Art Jones

Crayola Creation Corner

$20, IBM Software
800-320-8377
www.ibm.com/pc/athome
Ages 5 to 10

When I was a kid my great-grandmother introduced me to the colors of Crayola crayons. If ever there was a champion coloring-book artist, it was she. I aspired to create work of her caliber: bold outlines, even textures, and impeccable color schemes. Imagine the nostalgia as I installed *Crayola's Creation Corner*.

Crayola is a beloved household name, but this particular CD-ROM is unfortunately aptly titled; its contents sit in one corner of a large, otherwise empty room. There are plenty of fun ideas here, but the game (I suppose you could call it a game) serves only as a jumping-off point. Your kids are offered guidelines to create party hats, book covers, stationery, paper dolls, mobiles, and the like. When they've decided what they want to make, only a quarter of the work is done at the computer.



Your future graphic artists might love using the screen of tool trays to design their project, but I question whether they'll want to leave the computer to cut, paste, and assemble once they've decorated and printed out. I think *Creation Corner* would've made a great book — dare I say, in the same vein as Martha Stewart's wildly successful craft books. That way, kids create tangibly from beginning to end. One must ask, is it really better because it's on a CD and not in a book?

There really isn't anything here that couldn't be just as easily transmitted via a book of cut-outs. My great-grandmother would definitely not aprove of this digitization of an activity that belongs on paper. But, if you've got an inkjet and a rainy day to spare, there's still fun to be had.

So get out your glue, your toilet paper tubes, your scissors and crayons: you'll need it all to complete these activities.

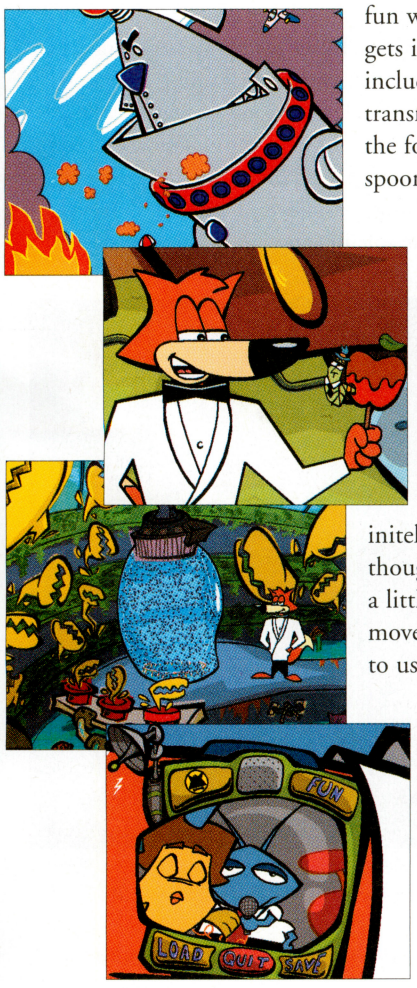
— Carolyn Blackburn

Spy Fox 2: Some Assembly Required

$25, Humongous Entertainment
800-499-8386
www.humongous.com
Ages 5 to 10

Catching bad guys is more fun with cool spy gadgets — and *Spy Fox* has plenty of them to aid young sleuths in this intriguing adventure game. It seems the evil Napoleon LeRoach has plans to take over the world with the aid of an 1,100-foot-tall canine robot. The debonair Spy Fox, reminiscent of 1960s TV's Maxwell Smart, is on the case.

As in most adventure games, kids must collect clues by talking with characters they meet, and use their wits to figure out how to get in secret areas and uncover clues. The brain work is made more fun with the ingenious gadgets in *Spy Fox's* inventory, including a utensil kit that transmits fingerprints from the fork to a receiving spoon, freeze-dried ski pills and a pair of ice skates that enable Spy Fox to skate like a medal winner. Besides the cool gadgets, there's plenty of campy humor and many mini-quests to keep kids entertained. Younger kids will definitely need some help, though and the interface is a little fussy. You must move the gadget you wish to use over just the right spot for it to work; you can't just drag it out and give it to Spy Fox. You also have to pay close attention to what characters say, or you may not be able to figure out how to use the objects in your inventory after you've gone to all the trouble of collecting them. Don't be rude: talk to everyone you meet.



However, most will find that *Spy Fox 2* offers just the right amount of challenge for young minds, in a colorful cartoon world that they'll love.

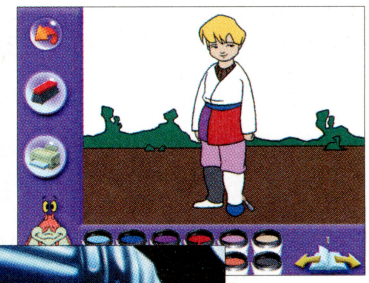
— Carrie Shepherd

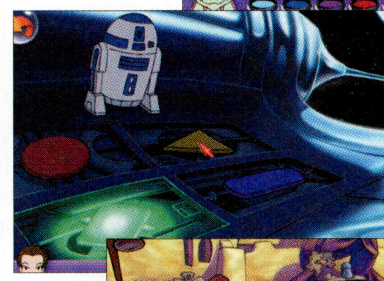
Star Wars: Jar Jar's Journey Adventure Book

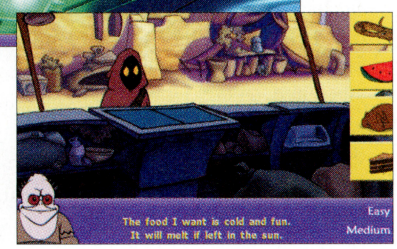
$30, Lucas Learning
888-887-7909
www.lucaslearning.com
Ages 4 and up

Jar Jar Binks, the irksome alien in *Star Wars Episode I*, who wreaked havoc on all he encountered, including the good humor of audiences far and wide, is back to share an abridged version of the movie with your kids.

To challenge reading skills, Jar Jar's Journey is set up like a book. On 16 pages of story, kids follow along with the words as they become highlighted. Jar Jar's voice irritates, so it is a relief when Queen Amidala, Anakin Skywalker, and Qui-Gon step in to narrate. Still, this is very much Jar Jar's story. Unlike the other characters, Jar Jar springs to life on every page. When clicked on, he trips, belches, and slurps up foodstuffs. ("Mmm, tastes like chicken," he says.)







To discover which other objects are clickable, drag the cursor along the page. When pressed, the junk dealer, Watto, with his thick Italian-style accent, says, "I don't click on you, why you click on me?" Elsewhere, droids charge, creatures grunt, Anakin's mother pours water, Sebulba slings a rock, podrace spectators do the wave — but each isolated activity is time delayed and fails to drive the plot forward.

Unlike the software's *Singing Dictionary*, which plays the same melodies over and over again, all six of the software's games were well thought out. *R2-D2's Flashing Lights* plays like the memory game *Simon, Fode & Beed's Crazy Creatures* inspires compelling alien combinations, *C-3PO's Picture Match* is Concentration with a puzzling twist, *Jar Jar's Bongo Maze* challenges kids to find the way to Theed, *Jar Jar's Coloring Center* lets kids save and print their Star Wars pictures, and last but not least, *Graga's Food Finder* requires kids to solve the riddles of alien appetites. The games, which offer three levels of difficulty, are easy to operate, intelligently incorporating the Star Wars mystique.

— Amy Shafron

By Alex Handy

Of Dice and Men (Or Women)

A Beginner's Guide to Role-Playing Games

Role-playing games (RPGs) are quickly becoming the next big thing in gaming. With such wonderful titles as *Baldur's Gate* and *Diablo II* coming to the Mac soon, it's time to bone up on your role-playing IQ. Have you ever wanted to fight Djinns alongside Aladdin, or challenge dragons to riddle contests alongside Bilbo Baggins?

RPGs offer you a window into lands that we may never pass into from this mundane world — lands of fantastic magic, vengeful gods, and legendary heroes. So climb aboard your horse, unsheath your sword, and let's explore these wonderful new worlds!

Lesson One: Ancient History

Role-playing games as we know them today are actually highly evolved military war games. In the early 1970s, a group of avid war gamers began to grow weary of reenacting the battle of Waterloo in their sandboxes. Eventually, their armies of musketeers and cannons morphed into those of dragons and knights. As the games became more elaborate and the fantasy figures became more diverse, the players formalized a rule system. Thus was born the granddaddy of all role-playing games, the ever popular *Dungeons & Dragons*.

Dungeons & Dragons struck a nerve amongst gamers, and soon America's kitchen tables were being cleared of Monopoly boards and consumed by stacks of rule books, pads of paper, and dice. Games played out like interactive stories, with each person describing their character's actions. *Dungeons & Dragons* was the first truly customizable game available in the U.S. Players could create their own heroes from the ground up, giving them a life story, background, and motivations. Once each character had been created, players formed an adventuring party and placed themselves at the mercy of their Dungeon Master (or DM for short).

Dungeon Masters play God. They control the adventure and decide what is inside the chest you just opened. Good Dungeon Masters are hard to find. If you rub your DM the wrong way, there's a distinct chance he or she will stick a rattlesnake in your hero's knapsack while you sleep (DMs can overrule any dice roll). So to keep things a bit more fair, *Dungeons & Dragons* uses dice to decide random events. Players roll dice to determine things that would normally be left to chance, such as how much damage you take from an arrow or how long it takes you to climb a tree. In combat, dice keep things orderly so there are no "Bang Bang! Shot you!," "No you didn't! No you didn't!" -type arguments.

Of course, as with anything new and unprecedented, there was some controversy in the early years of *Dungeons & Dragons*. Rumors of players getting carried away with their gaming ran rampant, such as a group of players who allegedly committed suicide when their characters died after a particularly long gaming session. Rest assured, however, true role playing has nothing to do with

Satan worshiping or bizarre magic rituals. A good game of *Dungeons & Dragons* is no more an occult practice than is a good round of lawn darts.

Lesson Two: Divergence

With *Dungeons & Dragons*' new-found popularity, it wasn't long before everyone and their dog had a role-playing game to peddle. Games covering every

imaginable topic hit the market — everything from giant robots to ghosts to superheroes. Gaming worlds ranged from the morbid (post-nuclear, apocalyptic, mutant-infested) to the wacky (cartoon worlds where anvils and mallets are your weapons). Role-playing games ran rampant across the face of our nation, and since it was the age of the personal computer, it was only a matter of time before role-playing games made it onto computer screens.

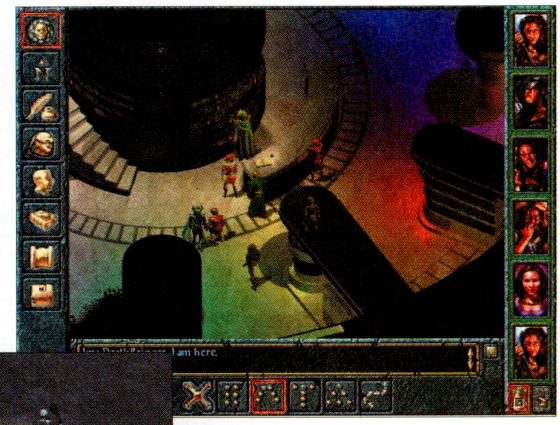
Computers were a perfect match for role-playing games since they didn't need dice and players don't need to worry about to a bitter and jaded DM. Plus, computers can handle a lot more information at once, whereas a DM would have to look through stacks of books to find the rules for bizarre situations. So, as with so many other things in our time, the world of RPGs split in two: the digital world and the table-top world.

In the digital world, things were rough at first. Games such as *Rogue* used characters on the keyboard to represent the halls of a dungeon and the monsters within. While such games were long and immersive, they weren't terribly user friendly. *Rogue* was not without its innovations, however. If you've ever played *Diablo,* you know that the true joy of the game comes from its randomly generated dungeons. This is a throwback to *Rogue*: both games create original dungeon layouts each time you play the game, thus ensuring that you will never tread the same halls twice. But more on this later. Now it's time for RPG boot camp.

Lesson Three: The Basics

Almost all role-playing games have some very simple things in common. Most of them use a statistics-based system to determine the power of their characters. Normally, these stats are either randomly generated, or players start with a pool of points to distribute amongst attributes as they see fit. Each stat is a measurement of attributes, such as strength, dexterity, wisdom, intelligence, and charisma. In *Dungeons & Dragons*, these stats are based on a 3 through 18 scale (you roll three six-sided dice to determine the numbers). A character with a strength of 18 and a charisma of 4 could be a hired goon, whereas a hero with an intelligence of 17 and a dexterity of 5 could be a clumsy genius.

Every game uses a different stat system. Some games use a scale of 10 to 100, while others use only 1 through 5. Also, individual categories vary as well: Instead of strength, a game may measure your comeliness or your skill with magic spells. All these numbers relate directly to performance in the game. A strong character would be best suited to be a knight, while a weak but dexterous player would be better off as a thief.



Old School/New School: *Baldur's Gate,* above, takes a table-top approach to the RPG genre while *Diablo II* takes a traditional computer gaming approach.

Another constant in the role-playing world is the concept of races. While we on Earth have a few different races of our own, most fantasy worlds have hundreds of sentient races. In traditional *Dungeons & Dragons*, we have humans, elves, dwarves, giants, minotaurs, goblins, orcs, and all sorts of alien peoples. Each race has its own advantages, disadvantages, and subsections. Elves, for example, come in a number of flavors, from the High Elves (the snobs of the lot) to the Drow (subterranean, purple-skinned, evil guys). Most elves are short, thin, and very dexterous. As a whole, elves tend to be weaker than humans, but since they live to be 400, they are usually a bit wiser.

Of course, everyone in these fantasy worlds has a job that determines how your character grows, what it learns, and what it knows how to do. Usually referred to as class, jobs are often just as diverse as races. Since the goal of a role-playing game is find adventure, most classes are of the more exciting variety. Paladins (knights who are beacons of virtue), thieves, wizards, illusionists, priests, gladiators, and barbarians make up just a few of the typical classes you'll find in a medieval fantasy game.

When creating a character, you must first choose your race, then roll for your stats, then choose your occupation. Each of these steps affects the others drastically. If you choose to play a giant, for example, you'd probably not make a good thief. A giant would get bonuses for his strength and constitution (how much damage he can take), but would suffer a penalty for his intelligence and dexterity (most giants aren't too bright). Halflings (a short stubby race — much like Hobbits) make great thieves, since they usually grow no taller than three feet, placing them at eye level with everyone's wallets. Of course, you are not limited to using only halfling thieves; you can combine most any race with almost any class.

The real meat of an RPG is in gaining experience points. Defeat a particularly nasty villain and you could receive a whole boat load of experience points (xp). Play rough with the villagers and kill some shopkeepers, and you could lose some (unless you're trying to be evil, in which case you'll gain them). When you have a set number of xps, your character can gain a level of experience. Each level of experience will strengthen your character and give him or her access to new spells and powers. As you progress

Table for Two: *Realmz,* above, lets you assemble a party of warriors for battle while *Diablo II,* right, is a solo adventure.

from level to level, your character will mature and become a force to be reckoned with. Whereas a level-1 character will probably be eaten alive by a dragon in one bite, a level-15 warrior can chop the dragon's head off if it comes too close.

Lesson Four: Getting Started

So, what's out there? Now that we know the ins and outs of role playing, what strange lands are there to explore? Your best bet is *Baldur's Gate* from Graphic Simulations. It's a direct computer translation of the *Dungeons & Dragons* system, and many consider it to be the first computer game to truly do justice to the massive world of *D&D*. It's a deeply immersive game and can easily ruin your weekend plans. The game has all the makings of an epic fantasy adventure: evil kings, kindly dragons, swarms of undead zombies, and of course, lots of Orcs (the green pig-like guys in *Warcraft).*

And speaking of Orcs, if you've not played Blizzard's *Diablo* yet, put down this magazine and go buy a copy right now. *Diablo* is the best role-playing game to come down the pike in years. It's a simplified version of the traditional fantasy world. You are a hero destined to save a kingdom from the evils of *Diablo,* the root of all evil. To do so, you must venture down into the bowels of the earth and explore dungeons filled with ravenously evil creatures. Along the way you'll find treasure to sell in the town above the dungeons. If you're really lucky you might come across some enchanted weapons that will help you smite those who would resist your holy quest. But the real secret to *Diablo's* success is the infinite replay value of the game. Each time you play, the dungeons you explore will be completely different; the game randomly generates each new level on the fly.

If ghosts and goblins aren't your thing, you might want give Macplay's *Fallout* a try. While Macplay is now defunct, you can still find copies of *Fallout* at your local store. Set in the year 2080, *Fallout* centers on the exploits of a man searching for clean water. The world has been destroyed in a massive nuclear war, and the only survivors are scattered about the deserts of the world in clusters of ruined cities. *Fallout* provides a twisted experience and features a bizarre sense of humor. The game's world feels like the 1950s gone horribly wrong.

For those who like their games cheap, look at *Realmz, Cythera,* and *TaskMaker,* all of which are available for download from our Website at *www.machome.com/download. Realmz* from Fantasoft is a traditional RPG in which you create a party of intrepid adventurers to banish evil from the lands. If you complete the included quests, you can head over to *www.fantasoft.com* for a look at the selection of third-party adventures. *TaskMaker* is a solo adventure in which you must help a king by completing his quests. They range from the mundane (fetch my daughter) to the downright psychotic (assassinate so-and-so).

Cythera from Ambrosia is a Macintosh interpretation of the classic PC series *Ultima.* You're free to do as you please in *Cythera*: You can defend all that is right and good, or you can steal people's shoes and be a general no-good nick.

The world of role-playing games is not confined to the small screen, however. If you're interested in playing some good old-fashioned, pen-and-paper role-playing games, head to your nearest book store. Most major stores have a role-playing section, and you can find some excellent new worlds to explore there. White Wolf's *Vampire: The Masquerade* is a game of political and social intrigue in a world where vampires are real and the boogieman actually can get you. FASA's *Shadowrun* is a cyberpunk game in a world where the Internet is a virtual reality world unto itself. Players can hack into corporate computers and sell the info they find there. And last, but not least, there's the venerable *Dungeons & Dragons.* The *D&D* world is spread out over thousands of books and hundreds of worlds. There's a *D&D* world to suit every bizarre fantasy idea ever created. Pick up a Player's Guide and grab some friends to get you started. MH

Resources

White Wolf
Makers of modern day horror RPGs about werewolves, vampires, fairies, ghosts, and magicians. Gameplay focus varies from game to game: *Werewolf* is a combat game while *Vampire* is a social game.
Most rule books cost around $20.
www.white-wolf.com

Wizards of the Coast
It recently purchased TSR, the makers of *Dungeons & Dragons.*
Most books cost around $20.
800-324-6496
www.tsr.com

Fantasoft
Makers of *Realmz*
$35
www.fantasoft.com

Blizzard
Makers of *Diablo* and *Diablo II*
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800-953-7669
www.blizzard.com

FASA
Makers of *Shadowrun* and other nifty book-based RPGs.
Most books cost around $30.
www.fasa.com

Graphic Simulations
Makers of *Baldur's Gate*
$50, 972-386-7575
www.graphsim.com

Aren't you tired of explosions, big guns and special huge effects?

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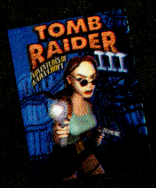
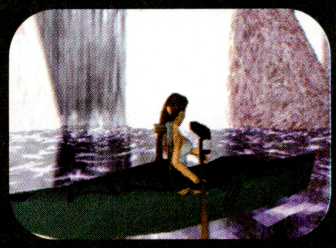
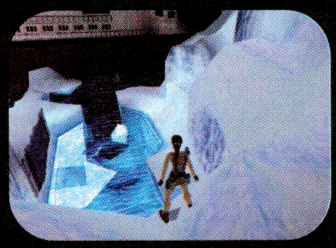
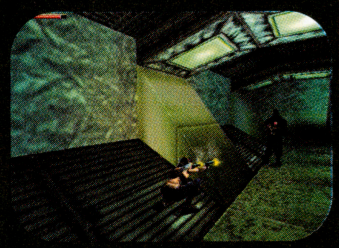


NOW for the MAC!







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www.aspyr.com

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Shogo: MAD Is Coming

In the ever-growing world of deadly, murder-ous robots piloted by people, *Shogo: Mobile Armor Division* stands tall. This sweet little plum is currently in the grinder at Hyperion Software. Originally published by Monolith, *Shogo: MAD* received a slew of awards from the PC gaming community. Now, Hyperion hopes the same great gameplay that made *Shogo* such a hit will bring in herds of Mac players. The game is played in a standard first-person perspective mode, but the action is sometimes faster than *Quake.* The first level of the game takes place in the midst of a planetary evacuation. You play the pilot of an anime-style armored suit. Of course, this suit is armed to the teeth and you'll pick up some great weapons along the way. Keep your fingers crossed: the release date is hovering around the first quarter of 2000.

Hyperion Software, www.hyperion-software.de

Great Horny-Toads, Noooooo!

***Halflife* for the Mac is no more. Valve, its creators, told Logicware to** halt all work on the game. Sierra, parent company of Valve, attributes the game's cancellation to revised sales figures that didn't seem to support the game's viability. What that means in English is they didn't think they'd make enough money to make the game profitable. This is truly a travesty, as *Halflife* was evidently close to being finished. Only a few weeks before this announcement, Valve had told Logicware that the Mac version of *Halflife* should be Mac-to-Mac networkable only, despite the fact that since the beginning of the project, the game was networkable from Mac-to-PC. Feel free to send Sierra email about this, and let them know you would buy the game if it were to be released. (However, we at *MacHome* do not condone the use of the word "butthead.")

Sierra, 800-757-7707, www.sierra.com

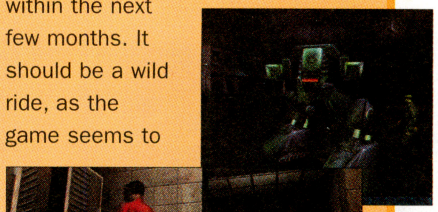
A Miniature City Inside Your Palm

Looking for something to do during those boring board meetings? Need something to keep your mind busy while you wait for the bus? Well, if you've got a Palm III (or Visor) or better, you can grab a copy of *SimCity* for the road. Atelier has brought the original *SimCity* to the Palm OS, and your productivity will never be the same. This is the game that destroyed lives and ruined social gatherings for months on end. You play god/mayor of a new town, and you must build your city from the ground up. It's horribly addictive, so you might want to leave your Palm at your desk if your boss calls an important meeting. Otherwise, you might find yourself adding a new power plant to your city when you should be listening to another boring lecture on creating a proactive dynamic paradigm in your workplace.

$30, Atelier, 800-656-6526, www.atelier.tm

Deus Ex Pescacum

Deus Ex*, Ion Storm's *Unreal engine-fueled masterpiece is on its way to you. Yes, gentle Mac gamer, this amazingly beautiful game should be on your plate within the next few months. It should be a wild ride, as the game seems to



be a blend of role playing and mindless violence. And with the *Unreal* engine at its core, the game runs on the Mac with very little modification. What this means is that the game uses the same core graphics rendering program as *Unreal.* But *Deus Ex* ain't no *Unreal.* According to Warren Spector, lead designer for the game, "You play the role of J.C. Denton, one of only two nanotechnologically augmented agents for UNATCO — the United Nations Anti-Terrorist Coalition. ... Your first few missions seem pretty straightforward, as you try to stop terrorists from hijacking Ambrosia, the only known treatment for a virus that has decimated the population everywhere it's reared its ugly, viral head." Over time, things get more complicated, and you start to question who's good and who's downright evil. Sounds like a heck of a plot. Unfortunately Ion Storm, brainchild of John Romero (one of the founders of id Software), has yet to ship a game in its three-year history. Evidently, only time will tell.

Ion Storm, www.ionstorm.com

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Tomb Raider III

$50, Aspyr Media
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www.aspyr.com

Lara Croft hath returned! Rejoice in her killer instincts. Revel in her monkey-like movements. Gawk at her ample … um … muscles. Yes, all the stuff that makes *Tomb Raider* so durned fun is back. While the game isn't winning any awards for originality or innovation, there's definitely a lot to be said for Lara and her adventures.

Tomb Raider III holds true to all the conventions that made the first two installments great. Everything you love about the series is here: the death-defying acrobatic acts, the big guns, and the big … well, you get the idea. (Lara's got new moves and some new outfits: it's like meeting her for the first time all over again.)

All hype aside, *Tomb Raider III* is a blast. It's one of those games you'll love to hate. No matter how many times you fall three stories to a violent death on jagged rocks, you'll just keep coming back for more abuse. The "one more try" factor is in full effect here. And it's a good thing too, because the puzzles and acrobatics needed to make it through some of these levels are truly evil. Expect to spend a lot of time on each section of a level, and make sure you save early, save often.

Unless you've been living under a stack of old AOL CDs for the past few years, you've seen Lara Croft by now. If you've not played any of her games yet, *Tomb Raider III* is a good starting point. It's easy to jump right in and pick up the reins with little or no *Tomb Raider* experience. There's plenty of hand-holding for new players, but, as before, none of it is required for veterans. The uninitiated would do well to think of the *Tomb Raider* series as a day in the life of Indiana Jones with gymnastics. Lara is, contrary to what her publicists would have you believe, not a model; she's an archeologist in the same tradition as Harrison Ford's famous alter ego.

Being a swashbuckling archeologist entails a lot of jumping, climbing, tribal desecration, and shooting. As Lara, you'll venture to all points west, meet new and interesting people, and shoot them repeatedly. *Tomb Raider III* takes cues from the first two in the series: It combines the level design of the first game and the deplorable violence of the second game. It's a bit disturbing to use Lara to run through a tribal village shooting people who seem to be defending their homes, but then this is a video game.

Of course, those homes and villagers are darned pretty, even when they're falling over after being hit with a rocket (Lara's arsenal is beginning to look like something out of *Quake*). If you have a 3D card, you'll see dazzling graphical displays. The environments are breathtaking when accelerated. But even without a 3D card, you'll be treated to some nifty visuals. Be forewarned, however; all those great scenes require a bit of horsepower, so you'll need a G3 to run the game at a playable speed.

Hunting for bugs and glitches turned up almost nothing. There are some pretty bizarre clipping problems (that's when polygons go through each other), and collision detection is a bit off (that's the mechanism that tells if polygons are going through each other. Bad collision detection means Lara seems to half-vanish into a wall once in a while.) Of course, since Westlake Interactive (they translated *Unreal* and are currently working on *Madden 2000*) did the translation of the game from PC to Mac, it's pretty much a given that it will run like a dream. Hats off to Westlake on another fine translation.

So, if you're a fan of Lara Croft, you'll be in hog heaven with *Tomb Raider III*. Fans of the original will love the return to more traditional levels, while *Tomb Raider II* fanatics will love the increased body count. All in all, *Tomb Raider III* is a solid sequel to one of the most rewarding and exciting game series to date.

— Alex Handy

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GrooveMaker

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GrooveMaker is a great idea that just didn't get the care and attention it deserved. Who wouldn't leap at the idea of making his or her own music with a minimum of effort and a small investment of time? Sadly, while GrooveMaker does let you build some pretty cool music, its painful interface and constant crashing ruin all the fun.

At the outset, GrooveMaker seems sweet. You can build songs with an array of premade musical hooks and loops. By combining loops and beats, you can create songs that would keep any raver happy. Once you've finished building your beats, you can sequence them into songs, and finally save them as AIFF files (a fairly standard format).

But this is a program that was intended for Windows users. It's awkward to use, and the interface requires a lot of mouse clicks that could easily be eliminated with no loss of function. Once you find a set of loops and beats you like, you can mark them as a groove. Once you've assembled a collection of grooves, you can link them together in the sequencer.

Unfortunately, this is an awkward process as you can't delete grooves or edit them once you've marked them. And you can't listen to your grooves in the sequencer. Thus, you're forced to write down your sequence on a piece of paper and copy it into the program. Talk about awkward.

Also, there are a lot of small bugs and quirks that can result in aggravation. In the Preferences window you must type the name of the folder you want to save your work in along with the names of all the folders above that one, much like typing in a DOS or Linux directory. But, oh, the music is so cool! It's a shame that GrooveMaker is so poorly implemented, because the grooves you can fashion with it are truly jaw-dropping.

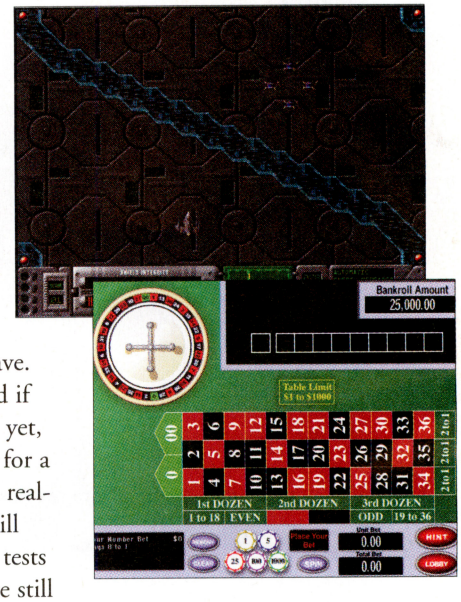
Although the only songs you can make are of the Techno variety, they can be shockingly varied in style and feel. If you're willing to put up with a lot of annoyances, GrooveMaker will definitely have you cutting up the dance floor with its funky beats. Just be sure to save often.

— Alex Handy

Ten Tons of Fun

$40, Starplay Productions Inc.
800-203-2503
www.starplay.com

No, it's not a cavalcade of overweight clowns; it's a bundle o' games from Starplay. And what a bundle it is! Here's the list: *Pro Pinball, Alley 19 Bowling, A-10 Cuba, Starlight Casino, Descent II, Myth, Souls in the System, Bonkheads, Virtual Pool,* and *Absolute Solitaire*. Phew, that's a spicy meatball! If this bundle were *Descent II* and *Myth* alone, I'd say, "Gads, man, go buy it!" But with all these other goodies tossed in, well, I can hardly contain my glee. *Alley 19, Pro Pinball, Virtual Pool, Starlight Casino*, and *Absolute Solitaire* are excellent parlor games. Each one is entertaining and dead simple to learn. They're all perfect for wasting 10 minutes while on hold or when you're waiting for an email to come back.



But the real cream of this crop is the five games that won't let you leave. *Myth* is fabulous, and if you haven't played it yet, you're a sorry excuse for a Mac gamer. Bungie's real-time strategy opus still holds up despite the tests of time, and there are still hundreds of players online at Bungie.net waiting to decimate you. *A-10 Cuba* is just oodles of fun, and bringing your A-10 Warthog in low for a bombing run in a canyon is truly spine tingling. *Bonkheads* is a variant on *Mario Brothers* and will keep you and a friend up all night crying, "just one more level!" Then there's *Descent II*. What can I say; playing this game can get ugly. Bring an airsickness bag, because you will instantly lose track of which way is down. Finally, there's *Souls in the System*, a lost gem amongst Mac games. This is a fabulous action game in which you control a quick little ship in an overhead perspective world. You'll fight wave after wave of fast-flying enemies and arm yourself to the teeth with some cool weapons.

The only complaint I have about *Ten Tons of Fun* is that it comes in a massive cardboard package, yet it contains only a small CD case. The packaging is so overzealous, I felt a half-point deduction was in order. Let's see if we can get software makers to clean up their packaging act a little; they're generating way too much trash.

— Alex Handy

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By Chris McVeigh

Customizing Your Macintosh

Adding a touch of personality your new computer

Although owning an iMac or iBook is a statement itself, there are other ways you can express your individuality through your computer. The Mac OS provides several easy ways to tailor the interface of your Macintosh.

Dreamy Desktops

One of the easiest ways to customize your new computer is to add a unique background picture. It can be a photograph of your choice, and even stills takne from your digital camera.

It's a good idea to prepare your pictures for display using an image-editing application such as Adobe Photoshop LE. Images to be displayed on an iMac should have a resolution of 1024 x 768 pixels, while images destined for the iBook should be 800 x 600 in size. You should also save the images in the JPEG format to reduce their memory requirements. Open the Appearance control panel and click on the Desktop tab. Next, click on the button in the lower right titled Place Picture. Locate the image of your choice and click Choose. To activate your selection, click on the button titled Set Desktop in the lower right, and then close the Appearance control panel window.

Let's say you don't want to wake up to the same desktop picture day after day. The Appearance control panel provides an undocumented way to randomize desktop pictures of your choice. Collect the images you'd like to see as desktop pictures and place them in a single folder. Open the Appearance control panel and click on the Desktop tab. Now, drag your image folder onto the mock desktop at the left of the window. You'll see that an image has been randomly chosen from that folder. Click Set Desktop and close the control panel. Now each time you restart, a background image will be randomly chosen from your desktop pictures folder.

Funky Fonts

The Appearance control panel also provides a way to change both your menu and desktop fonts. Open the control panel and click on the tab marked Fonts. The pop-up menu marked Large System Font offers seven choices for the menu font. The Views pop-up menu allows you to select the desktop font for icon names and lists in the Finder. You can choose any font that is currently installed in your System Folder. Experimentation with different fonts is key.

Eye-Catching Icons

Another fun trick is adding custom icons to your folders and documents. The Mac OS allows you to copy any image and paste it onto an existing file icon. It's a good idea to use an image that is 32 x 32 pixels in size — the standard resolution of a Macintosh icon. Click once on the icon you want and select Get Info from the File menu. You'll see the icon at the top left of the window that appears. Click on this icon, and select Copy from the Edit menu.

Close the window and locate the file to which you're adding the icon. Click once on that icon, and again select Get Info from the File menu. Click on the icon in the top left, and select Paste from the Edit menu. Simply close the window to confirm the change.

The Icon Factory's IconDropper is a shareware application that lets you to change icons without the hassle of copying and pasting.

Command-click on the icon you wish to change and IconDropper is launched, allowing you to select a replacement icon from your custom list of icon packs. IconDropper lets you to change entire sets of icons at once, too. Perhaps you dislike the standard Mac OS folder icons, and you'd like to change every last one of them. No problem. Download a custom icon pack that appeals to you and use IconDropper to activate the icon set. You can find vast libraries of cool icons at www.iconfactory.com. MH

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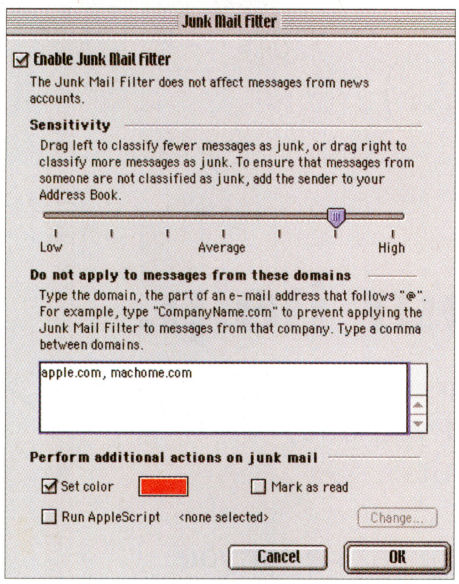
By Chris McVeigh

Control Junk Mail with Outlook Express 5.0

The scourge of emailers everywhere has got to be junk mail — unsolicited messages that find their way to your emailbox, touting everything from quick weight loss to instant riches. It fills up your inbox like snail-mail sweepstakes offers, sometimes obscuring more important missives. Thankfully, there are some solutions. Microsoft's new Outlook Express 5.0 includes a handy new junk-mail filter designed to identify suspect messages as they arrive. Select Junk Mail Filter... from the Tools menu. In the window that appears, you'll see an option at the top to Enable Junk Mail Filter. Clicking on the checkbox will activate the filter and allow you to adjust its settings. The next item listed is Sensitivity. Sliding the bar to the right lowers the filter's tolerance for suspicious messages.



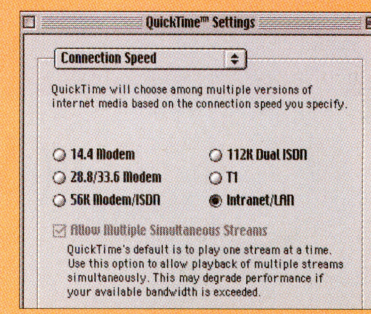
The next option allows you to specify address groups to be exempted from the filter. While most of the bulk mailings you receive are likely to be junk mail, you don't want to miss mailings from subscriber lists, like newsletters. For example, if you have subscribed to several regular newsletters from Apple. Outlook Express would likely flag such incoming messages as junk mail due to the repressed recipient list. You can correct the situation by adding the domain "apple.com" to the domain exemption box.

The next option listed in the Junk Mail Filter preferences allows you to perform several actions with the junk email — specifying a color (red is always easy to spot), marking it as read, or applying an AppleScript. Although the Junk Mail Filter does a very good job at identifying junk mail, it occasionally makes mistakes. You'll sometimes find that it has flagged a work-related message from an associate as junk. To avoid such errors, you simply need to add the associate to your address book. Outlook Express will never mark any email from a contact in your address book as junk mail.

But identifying junk mail is only half the battle. To truly rid yourself of the accursed stuff, you're going to have to take matters one step further. Once you have enabled the junk mail filter, you can make a mail rule to automatically delete suspect messages before they litter your inbox. Select Rules from the Tools menu. In the window that appears, select Mail (POP) from the New pop-up menu. At the top of the next window, name your new rule Junk Mail Delete (or something similar). Select "is junk mail" from the leftmost pop-up menu in the IF box. Next, select Delete from the pop-up menu in the Then box. Click OK to save the rule. Now, as junk mail arrives it is automatically identified and deleted. If only such a filter existed for real-world mail boxes!

Grabbing the Big Movies

QuickTime 4.0 has a setting for Internet connection speed that will occasionally prevent you from obtaining higher-quality content. Take Apple's recent iMac ads. Apple's site automatically



detects the connection speed specified in the QuickTime settings control panel. If you've set that speed to 28.8/33.6k or 56k, the Apple server will send you a smaller movie with a lower frame rate and poorer-quality audio. To grab the big movies, you have to change your speed setting. Go to the QuickTime control panel and select Connection Speed from the pop-up menu. Click on Intranet/LAN to ensure you are sent the highest-quality content.

share your tips!

Got some tips you'd like to share with your fellow *MacHome* readers? Please send them to:

chris @ machome.com

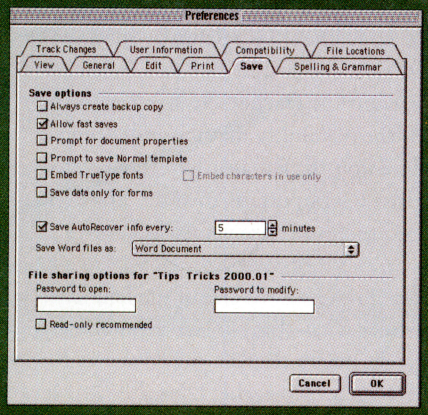
All mail is assumed intended for publication, and we reserve the right to edit tips for brevity and clarity. When sending your tips, please make sure to include your full name.

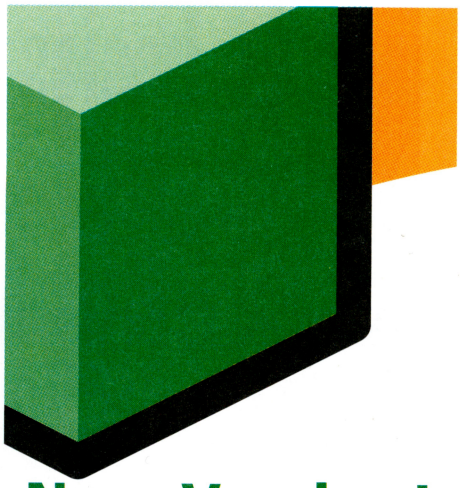
Clean Your Mouse

Have you noticed that some movements of your mouse seem to go unnoticed by your Mac? Do you push the mouse to the right over and over again before the cursor moves to the right? Do you notice a low thump as you roll the mouse in a particular direction? If you've replied yes to any of these questions, chances are pretty good that dust and grime have clumped on the rollers inside your mouse. There's an easy fix, though. Turn your mouse over and locate the mouse-ball housing. It is surrounded by a plastic disc. Take your thumbs and apply pressure to each side of the disc, and rotate it in the indicated direction. The plastic disc should soon pop off, exposing the mouse ball. Turn the mouse on its side and catch the mouse ball as it falls out. Wash the ball with hand soap and water, to make sure it's free of dirt. Now, turn the mouse over again and look inside. You'll see three plastic rollers on the side, two of which are the same color. These rollers control the direction the cursor rolls. You may also notice an odd collection of dirt gathered around the center of the roller. You should take a cotton swab and gently remove the dirt from each roller. It's important that you rotate the rollers, too. A clump of dirt may be hiding on the other side! Once the rollers have been cleaned and the mouse ball has been washed, you can put the mouse back together. Simply toss the ball in the mouse hole, pop the disc back on, and rotate it into place. If your mouse starts to act up again — and chances are that it will, unless your house is vacuum sealed and dust free — just repeat this procedure.

Autorecovery of Word Documents

System crashes are an unfortunate part of modern computing. To help combat losses in its Word program, Microsoft has built an Autorecovery feature into Word 98. The option is off by default, however. To activate Autorecovery, you'll need to launch Microsoft Word and select Preferences from the Tools menu. In the window that appears, click on the tab marked Save. Near the bottom of the window you'll see the Autorecovery option. Click on the adjacent check box to enable it. With the option turned on, Word will automatically save backup copies of your document(s) at regular intervals. The standard interval has been set to 10 minutes, but those of you who are fearful of crashes may want to shorten the time span to five minutes. Now if the computer crashes while you are using Word, you simply have to restart your computer and relaunch the application. Once Word has loaded, it will automatically open the backup copies of any documents you were working on when the crash occurred. You'll then have to save the documents with different file names to keep them, or conversely, you can copy and paste text from the back-up documents to the original documents. Although Autorecovery can't always recover the most recent additions to your documents, it helps you get on your feet again as quickly as possible.





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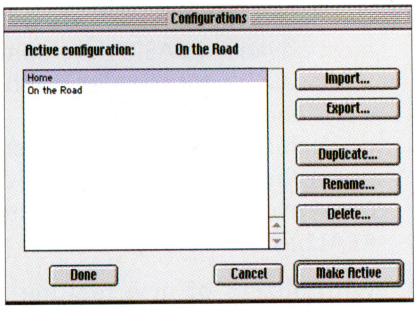
More Control Strip Fun, Better Audio, Offline Browsing

Q I seem to be collecting Internet settings on the Control Strip. I have four selections for Remote Access (the default and three ISPs), yet I only use one. I have deleted the other three from the Internet control panel, but this action fails to update Control Strip. How can I delete these old settings permanently?

Mike Duchaj

A Instead of fidgeting with the sometimes-confusing Internet control panel, you need to crack open the Remote Access control panel and select Configurations from the File menu. Your settings will be listed in the window that appears. Simply



highlight an item you wish to discard and click the Delete button to the right. Repeat as required — but be sure not to toss out the setting you're currently using. This will remove the superfluous settings from both the Remote Access Control Panel and the Control Strip.

Q After listening to some CDs on my iMac, I was wondering if there were controls for adjusting bass and treble? There are no controls in the AppleCD Audio Player and the Monitors & Sounds control panel only adjusts volume and balance. I do not want to add speakers — I just want to fine-tune the built-in speakers.

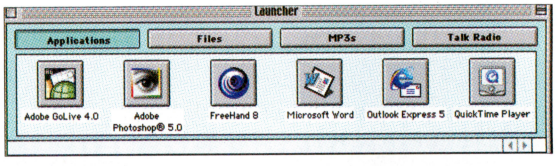
Barton Dewing

A Unfortunately, it isn't possible to modify the audio being read from a compact disc on older Macintoshes (including the original iMac series). In most cases the audio is converted to an analog format as it is read from the disc. It's then simply piped through to the speakers, largely bypassing the computer's circuitry. This makes meaningful modification of the sound difficult. The computer can only vary the strength (i.e., volume) of both the left and right channels. The latest iMacs handle audio differently from all other Macintoshes, however. At the iMac relaunch, Steve Jobs noted that the sound remains in digital format until it reaches the speakers. This opens the possibility that the audio can be modified on the fly, as it is with all stereo systems. It's important to note, however, that no such software yet exists.

Q Until recently, the size of the Launcher window has always been adjustable by dragging the button at the lower right-hand corner. Now the Launcher screen fills the monitor, and I can't drag it upward far enough to get at the button to reduce the size. Any suggestions?

Emerson L. Wittbecker

A This infuriating little problem happens when a window without a resize button is somehow opened far too large. It tends to occur when you lower the resolution of your display or use a display of a different resolution. In the case of the Launcher, there's a simple fix. Close the Launcher window and open your System Folder. Locate the Preferences folder within that folder and open it, too. Select as List from the Finder's View menu to



sort the files alphabetically. Find the file titled Launcher Preferences and drag it to the trash. Now simply relaunch the Launcher. You'll find that the window has reverted to its normal size.

Q I have a question about my iMac. Since installing a scanner, I notice that every time I start the computer I see the Mac OS logo on a folder — but it alternates with a question-marked folder. This happens three or four times before the iMac finally settles on the Mac OS folder. What causes this, and what can I do about it?

Larry Nicholas

A Actually, Larry, you're describing normal behavior in the iMac. As the system starts, it performs a few basic system checks and then searches for the boot volume — the hard drive containing the operating system. As this happens, the display alternates between the Mac OS folder icon and the question mark folder icon. In the event that the boot volume cannot be found (for example, if the iMac's hard drive has malfunctioned or

the Mac OS software has somehow been corrupted), the iMac will flash only the question mark folder icon. The delay you've noticed since installing your scanner may be because the computer is making a note of an additional device connected via USB. In any event, there is likely little cause for alarm. Rest easy and enjoy your scanner!

Q Many application installation programs advise me to disable extensions before installing the software. However, the CD-ROM cannot be used when my Mac is started up with extensions off! What are the minimum extensions necessary to get the CD-ROM to mount so the software can be installed? Inquiring minds want to know!

Andy Kenagy

A It's a bit of myth that your extensions need to be turned off to successfully install an application — with one important exception. Software publishers routinely advise users to turn off extensions before installation in the event you're running a virus utility that monitors all files being stored to the hard drive. This can interfere with the installation procedure and cause some real headaches. As you've realized, however, the blanket suggestion to turn all extensions off is rather dated. Almost all software now ships on CD-ROM, and it's impossible to access the CD-ROM drive without the CD-ROM extension loaded. The modern rules for software installation are thus a bit different. Disable any virus utilities you may be running, and then install your application or system update. You'll be fine.

Q I have read a lot of information about frequent Internet disconnections, but I have seen nothing about my problem: frequent connections! When I disconnect (but don't quit my Web browser) to make a phone call or write an email say, it almost immediately tries to reconnect me, and it drives me crazy! I hope you can help.

Jeanne Minnich

A Your Macintosh attempts to reconnect to the Internet when an application requests additional information from a remote server. Although you disconnect from the Internet, you leave your Web browser open. This is likely the cause of the mysterious reconnections. Some Websites you visit may automatically reload certain items now and again. For instance, a site might contain an advertising banner that cycles every five minutes. Even if you've logged off the Net, your browser will still send a request to the site's server for the next advertisement. This will initiate an unexpected connection to the Internet.

Thankfully, you can prevent spontaneous reconnections. After you disconnect from the Net, return to your Web browser. Internet Explorer users should select Browse Offline from the File menu, while Netscape Communicator users should select Work Offline from the File menu's Offline submenu. This tells the browser that you do not want to be connected to the Internet. You can browse through Web pages you've already accessed without worrying that a phone call to your boss will be interrupted by modem dialing. MH

let us know!

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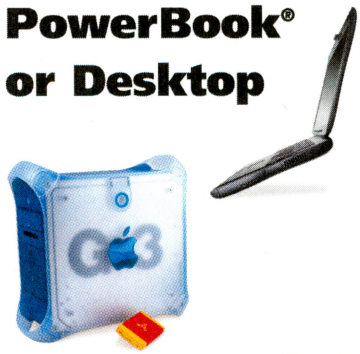

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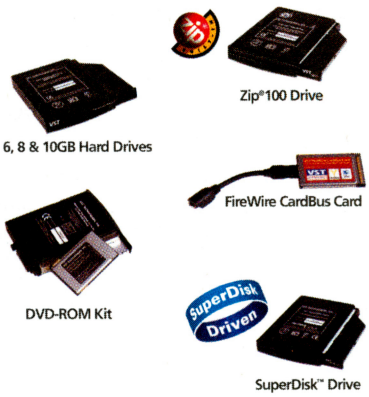

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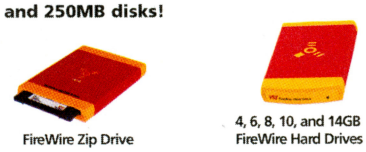

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By Chris McVeigh

Hard Drives

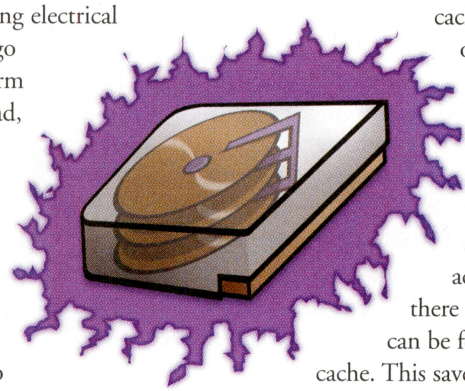
The Inner Workings of Your Mac's Storage Center

Think of your hard drive as your Mac's built-in library. It stores the applications you use on a daily basis, the files you create with those applications, and the operating system that tells the computer how to function properly.

Believe it or not, hard drives are quite similar to old record players. A motor spins a platter at a constant speed — between 3,600 and 12,000 revolutions per minute (rpm) — and a small actuator arm extends over the platter to read and write data. Modern drives contain two or more double-sided aluminum alloy platters stacked vertically, each coated with a microscopic layer of magnetic material. Data resides on each side of these aluminum disks, so two sets of actuator arms with read/write heads are required for each platter, clamping it like a set of tweezers. This machinery is sealed within an airtight casing to prevent dust contamination.

The hard drive's aluminum alloy platters are divided into concentric circular data paths called tracks. The tracks are divided into individually addressable sectors, to allow for faster access to your files. The smallest division in the platter's surface is known as a domain — a microscopic area of the platter surface that hosts a single "bit" of information, either a "1" or a "0."

Writing information to the hard drive is a fascinating application of science. Let's say you've been working on a letter to the local newspaper and you decide to save it. When you do, the hard drive first ensures that all domains in the target area of the platter have the same magnetic polarity. The drive's digital signal processor then takes binary data streaming from the computer and modulates it into a series of corresponding electrical signals. The signals go down the actuator arm to the read/write head, where the magnetic polarity of the domains is modified as required. To increase efficiency, hard drives use a method called flux reversal to write binary data to the disk.



A "1" is written by reversing the magnetic polarity of the domain, while a "0" is noted by leaving the domain as is. It's important to note that each domain in the magnetic layer keeps its polarity until it is reconfigured by the read/write head. This way, the hard drive retains information even if the computer's power is off.

Data is written to all platters simultaneously, from the outermost to innermost track, so one file may be stored on several different platters. Once a track is full, the heads move inward to the next.

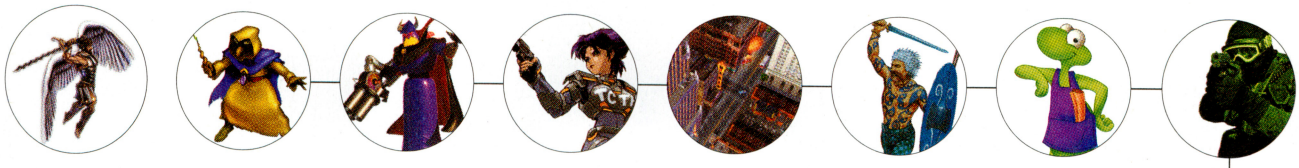
Reading data from the hard drive is a slightly different process. Let's say you want to view the letter you've been working on. You double-click on the document icon and your Macintosh sends the hard drive the request for the data, along with the data's location. The actuator arms immediately position themselves on the correct track and sector and begin collecting the information. The process happens incredibly fast — your essay is displayed onscreen in a fraction of a second.

As information is read from the platters, it is shuttled through the disk cache — a small memory buffer that all data is cycled through as it leaves the hard drive. If the computer requests some recently accessed information, there is a chance that it can be found in the disk cache. This saves precious seconds as the hard drive needn't bother retrieving the information from the platters.

The spinning of a drive's platters at speeds of 3,600 to 10,000 rpm creates a microscopic layer of air on either side of the platter. This layer cushions the read/write heads, allowing them to float just above the surface of the platter. Severe jarring of the hard drive can cause the heads to come into contact with the platters, which can lead to data loss and damage to the data surface

.Today's drives are constructed to withstand impacts up to 100 times the force of gravity, however, making such damage highly unlikely. And when the hard drive is turned off, the heads are "parked" in a designated area to further prevent the possibility of damage. MH

CHRIS MCVEIGH



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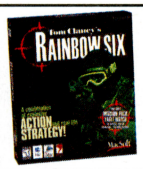

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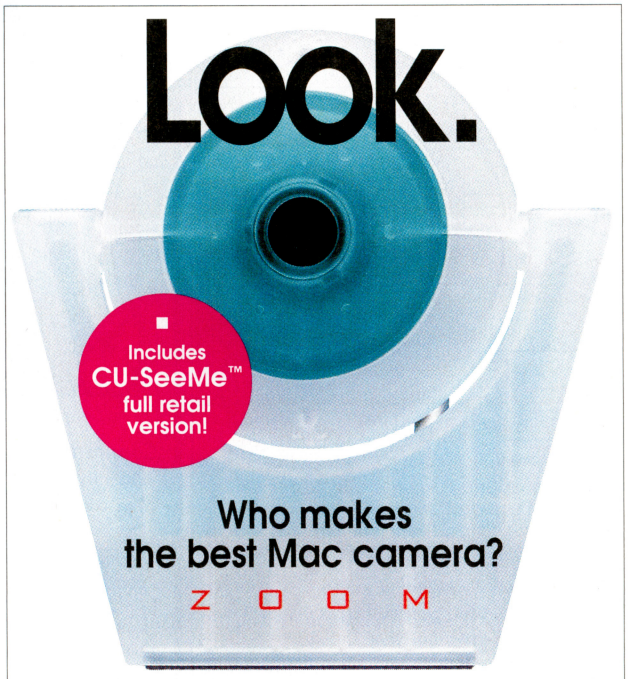

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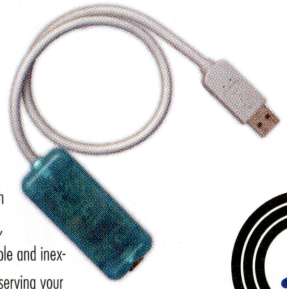

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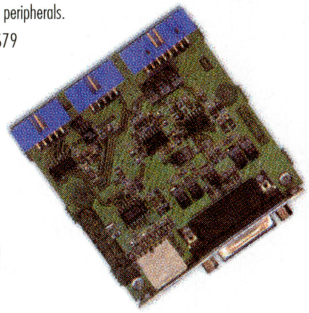

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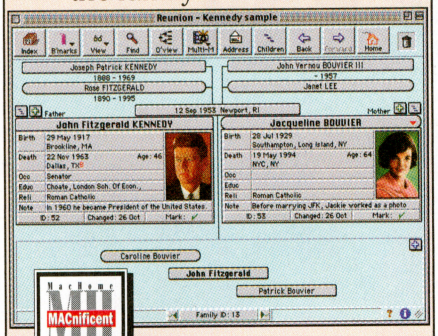

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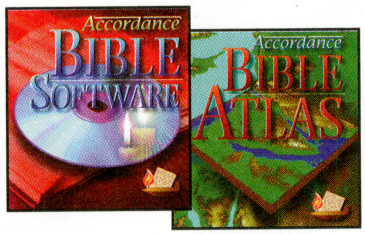

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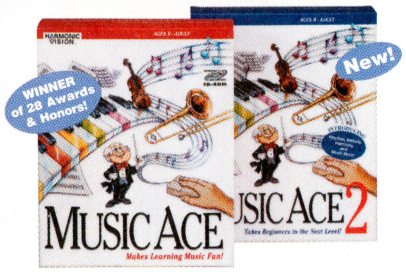

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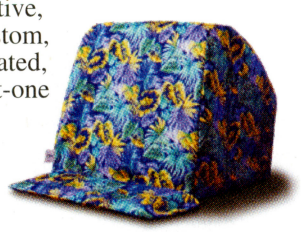

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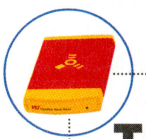
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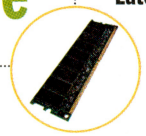
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ihnatko [Commentary]

By Andy Ihnatko

Sans Script

You still haven't learned to use AppleScript. Your punishment: this column.

I think if you've been reading me for a while, you know I am the soul of human kindness and generosity to my readers. Code of the Ihnatkos and all that: Pitch in for pal in need and give no thought as to self. A reader writes in needing a co-signer for a car loan? Well, I'm here for you.

Enough of that. Now, I'm going to ask you people to do something for me this time: learn AppleScript. I hate to have put you under the pressure of a debt of honor, but the argument "It's for your own good" has proven about as effective as it does when applied to a 7-year-old in front of an untouched plate of pickled beets, so I feel it's time to slip the iron hand from the velvet glove.

What scares people is the idea that AppleScript is an entire programming language with which you program your Mac. Please! It's a "Scripting Language."

Here's why: just learning the basics of AppleScript — the rough equivalent of performing basic arithmetic on a $160 programmable scientific calculator with vector and matrix math functions — will revolutionize your daily Macintosh experience to a far greater degree than any new OS upgrade will.

What scares people is the idea that AppleScript is an entire programming language with which you program your Mac. Please! It's a "Scripting Language." You don't program your kids to change their clothes, put their books away, and vacuum the rug when they come home from school. You just leave them a little note on the kitchen table, and if it turns out that they don't know how to work the Electrolux, you show them first.

This should be your mindset. Learn how to write out that list. (It's really nothing like the regimented programming language you might remember.) And learn how to show the Mac how to do something. This requires that you know how to operate a tape recorder, because the AppleScript Script Editor app that came with your Mac features standard record, stop, and playback controls. Hit the red round button, tidy up your Desktop like you do every day, and then click Script Editor's Stop button. There. The Mac knows how to do that automatically, now. And if you save that script into your "Shutdown Items" folder, it'll tidy up your desk automatically at the end of the day. No programming needed; none at all.

Another compelling reason to get hip to AppleScript is the fact it's an essential tool in creating and maintaining other people's perception that you're some manner of god. AppleScript can control and interact with any app you've got, and it is the mechanism by which you can interact with all kinds of hardware. After all, a script that automatically creates and emails an expense report is, well, nice, but if you want to make a real impression on your co-workers, let them discover one that fires a Nerf dart at their heads if they even try to access one of your secured folders while you're on vacation.

Finally, you should get behind it because Apple, praise Tarim, finally is. And it's about time, too. With the last few OS releases, we've finally seen AppleScript evolve from Merely Useful into [obscene gerund] awesome. With Mac OS 9, AppleScript can run over a TCP network. You know what this means? With a couple of scripts of just a few lines each, I can be 3,000 miles away and get an instant photo of what's going on in my office. And if I see someone in my chair, I can put a Nerf dart right between his eyes, man!

So please, don't make me ask again. No kiddin'. Go to www.toexcel.com and buy a copy of Danny Goodman's AppleScript Handbook, still the best primer in print (though a tad out of date). Then hit www.scriptweb.com for thorough and timely scripting resources.

Don't make me come over there. MH

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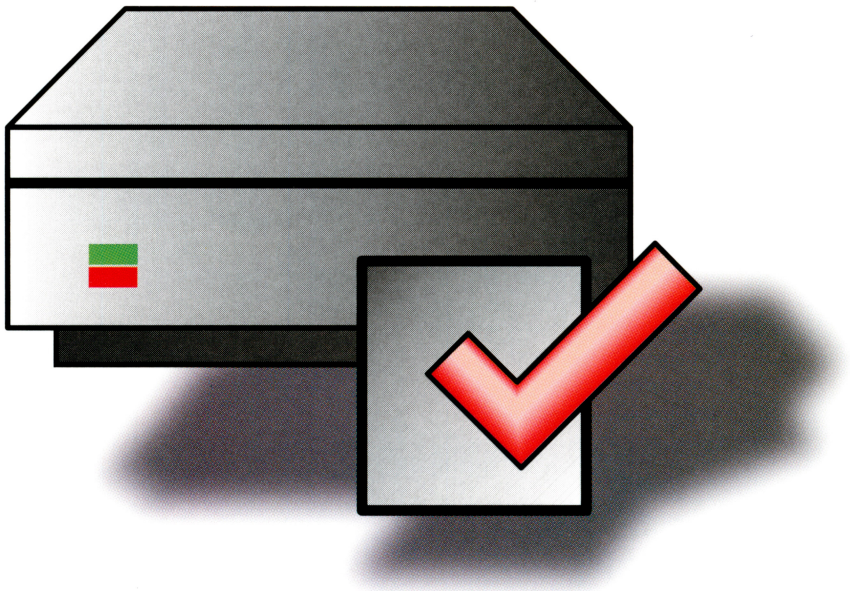

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**** Version 2.5.2 is scheduled to be released when Apple releases System 9.**

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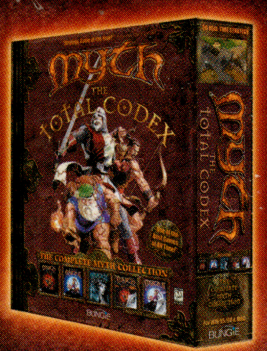

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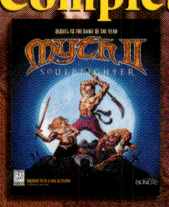

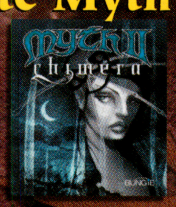

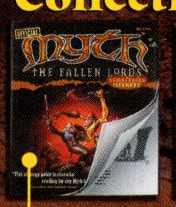

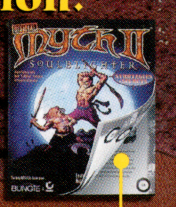

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